VOL. XLV. No.6

JUNE 1960

MECCANO MAGAZINE

15c

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18/6

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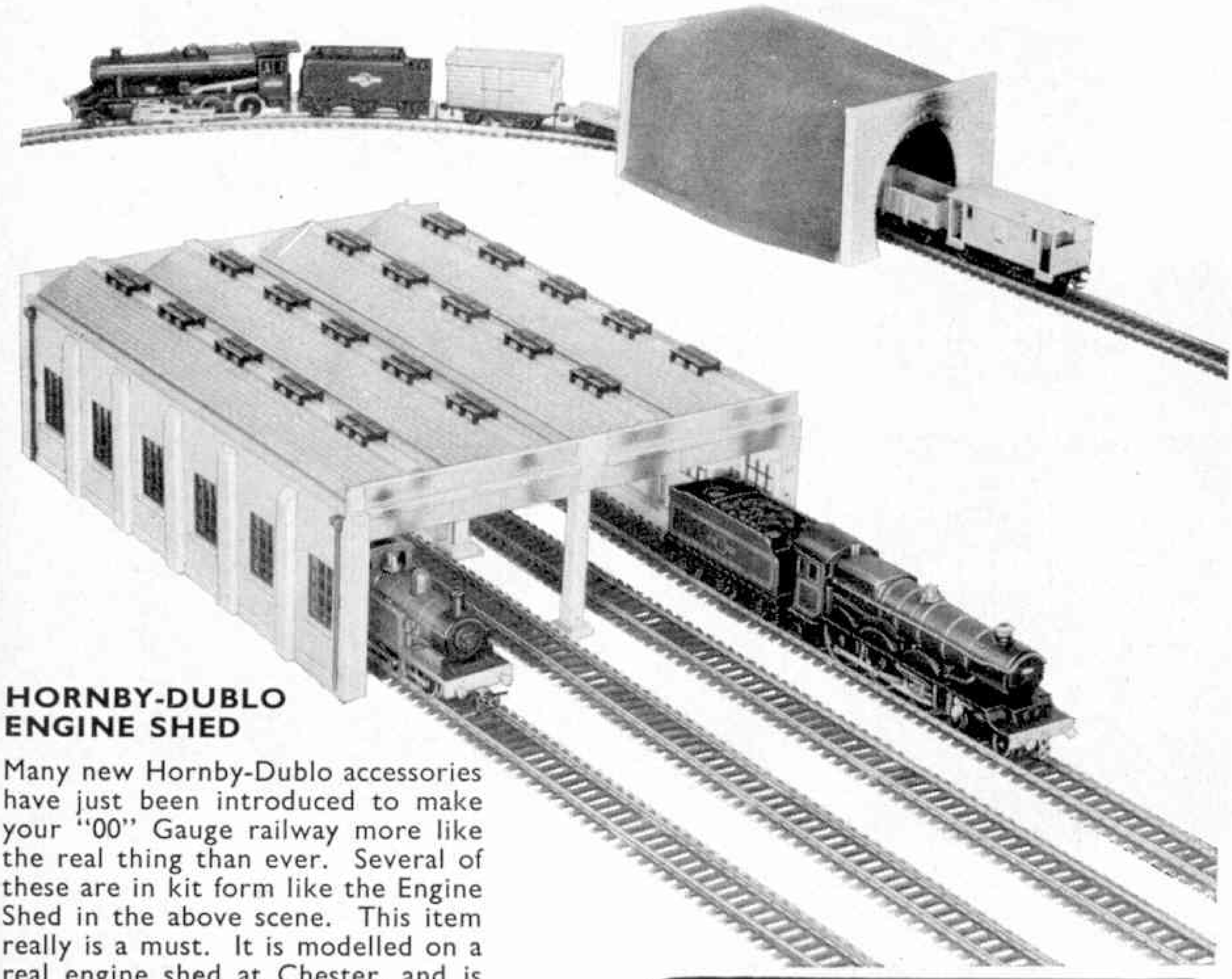
No model railway is complete without tunnels, and this new Hornby-Dublo Tunnel (moulded in high-impact Polystyrene) adds a touch of authenticity to any layout—large or small. The ends represent brickwork as seen on most tunnel faces. This model (seen in the picture below) measures 8 7/16 in. in length and is suitable for single track. Price **9/11** (inc. Tax)



HORNBY-DUBLO ENGINE SHED

Many new Hornby-Dublo accessories have just been introduced to make your "00" Gauge railway more like the real thing than ever. Several of these are in kit form like the Engine Shed in the above scene. This item really is a must. It is modelled on a real engine shed at Chester, and is wonderfully accurate even to the smoke marks on the roof end panels! It can be assembled in a few minutes and it is just as easy to dismantle.
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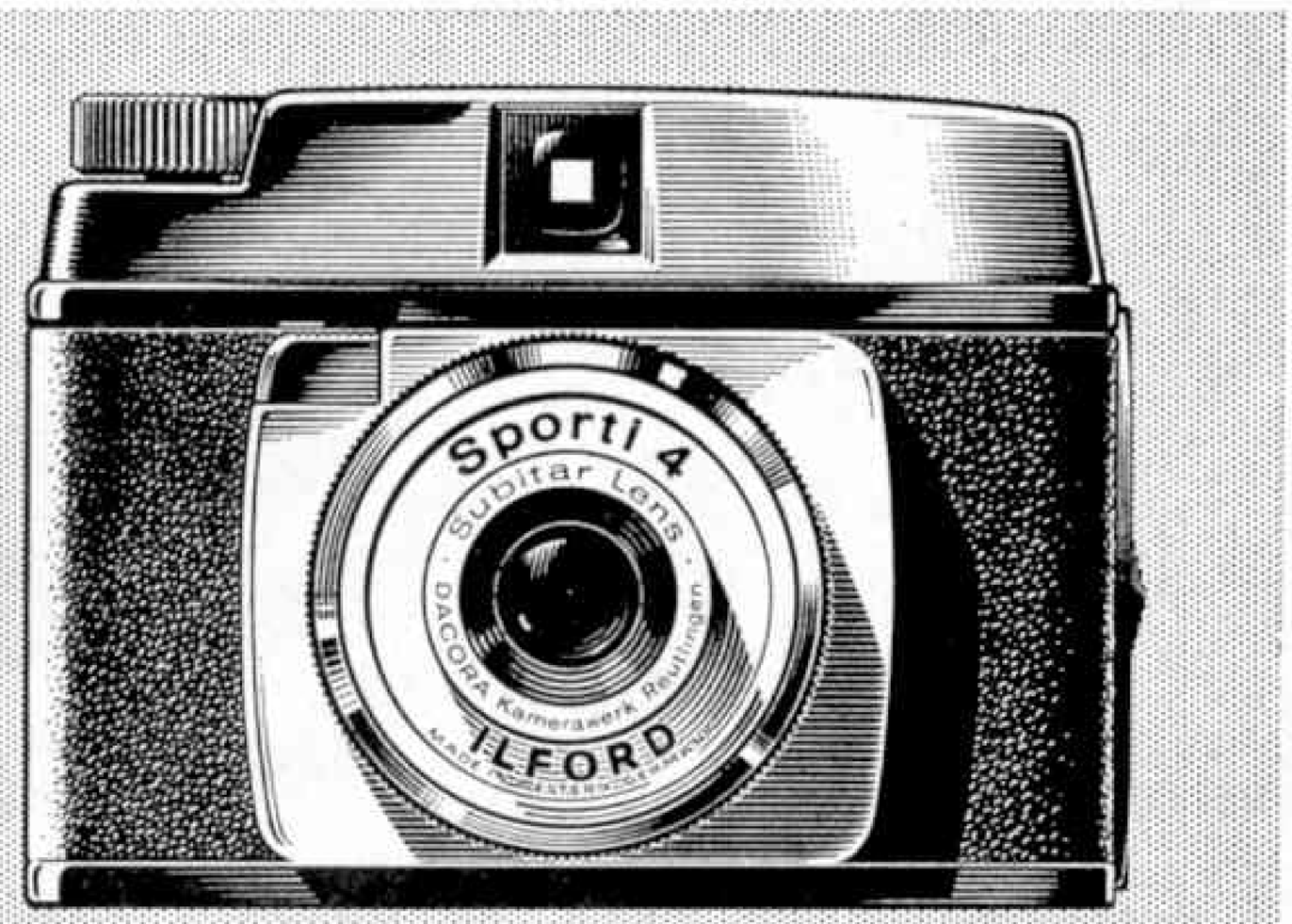

This new 'Sporti 4' is certainly some camera. A really smart job, strongly made, with a big eye-level viewfinder. Even if you've never had a camera before, you can't go wrong with the Ilford 'Sporti 4'. In daylight, set the aperture to SUNNY or CLOUDY and squeeze the button.

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A/A907

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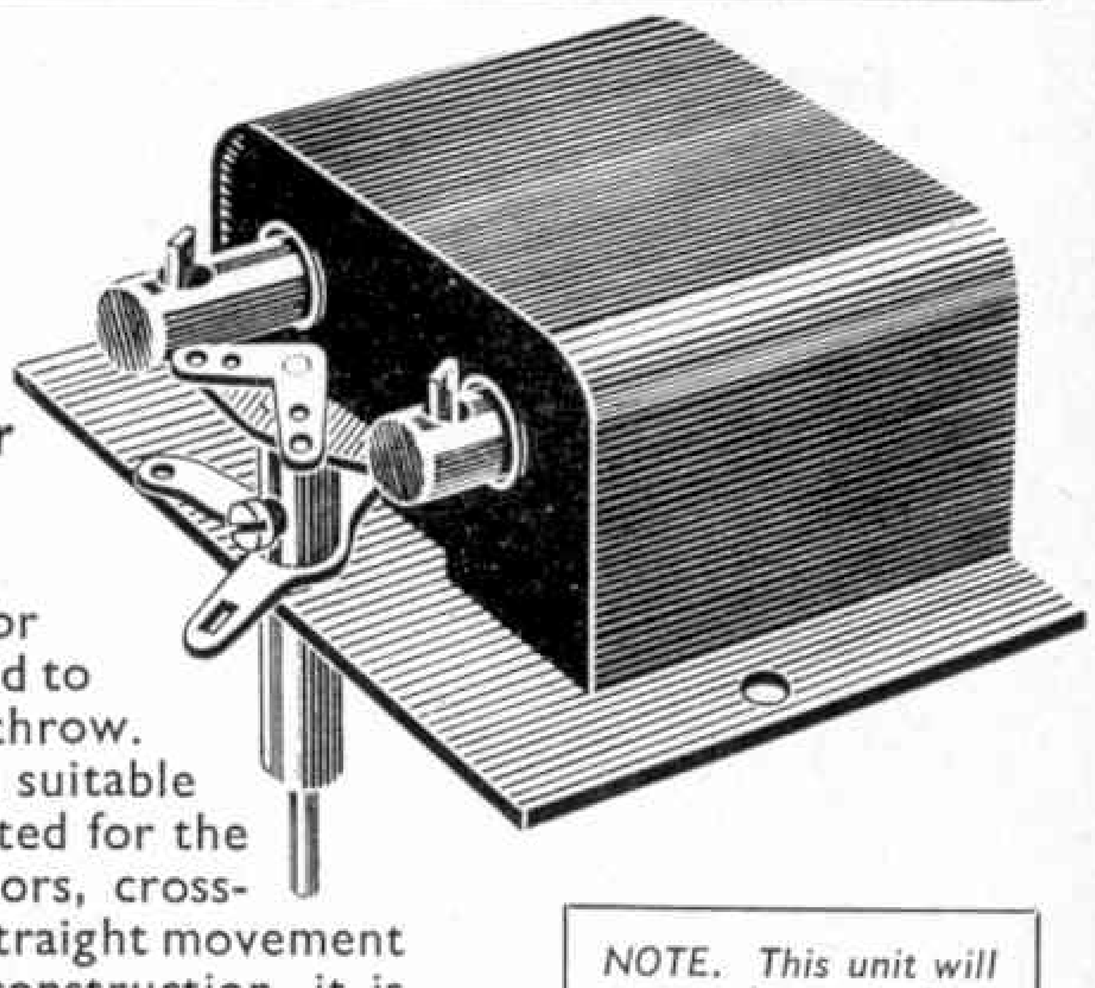

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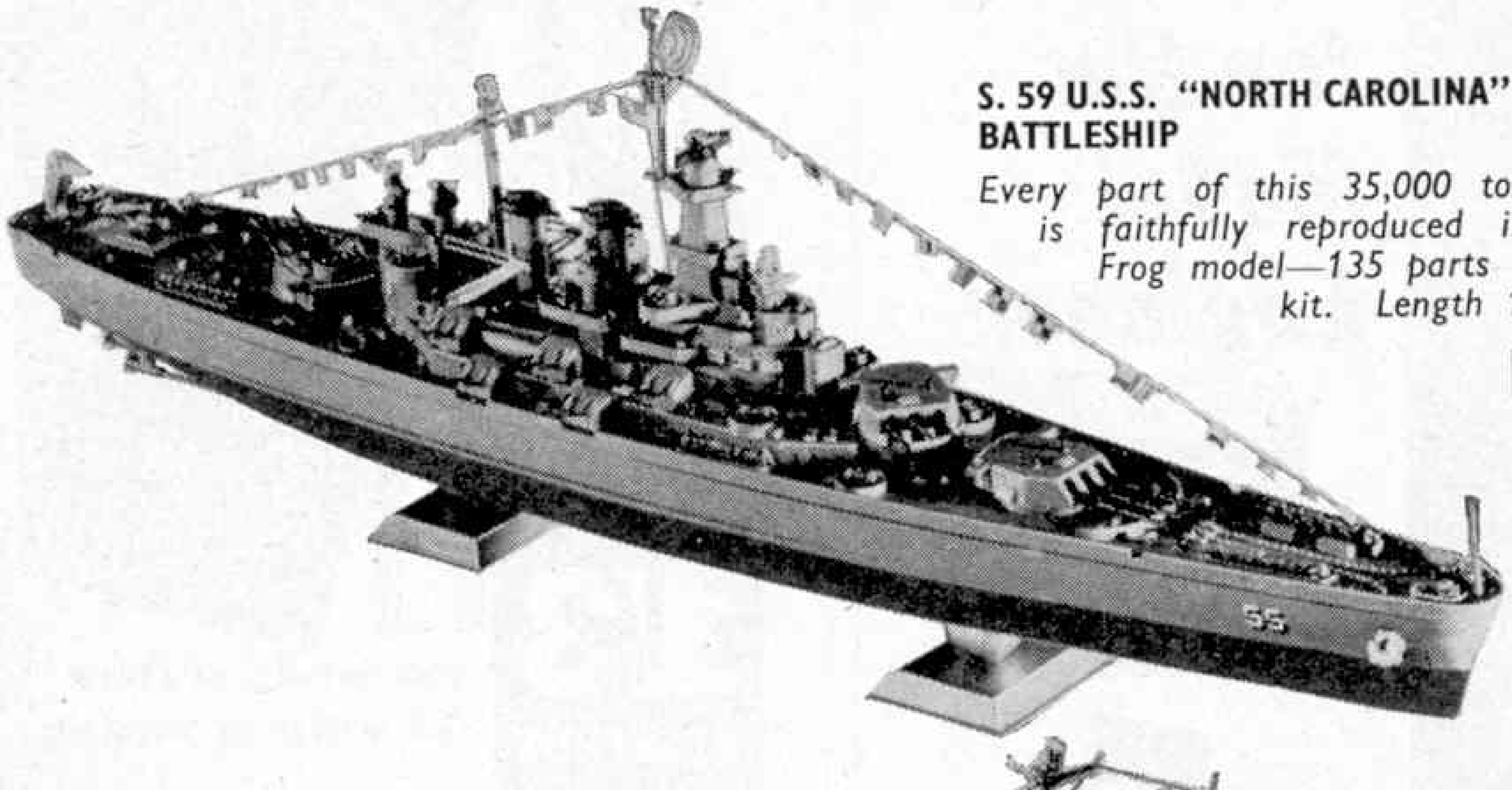

S. 59 U.S.S. "NORTH CAROLINA" BATTLESHIP

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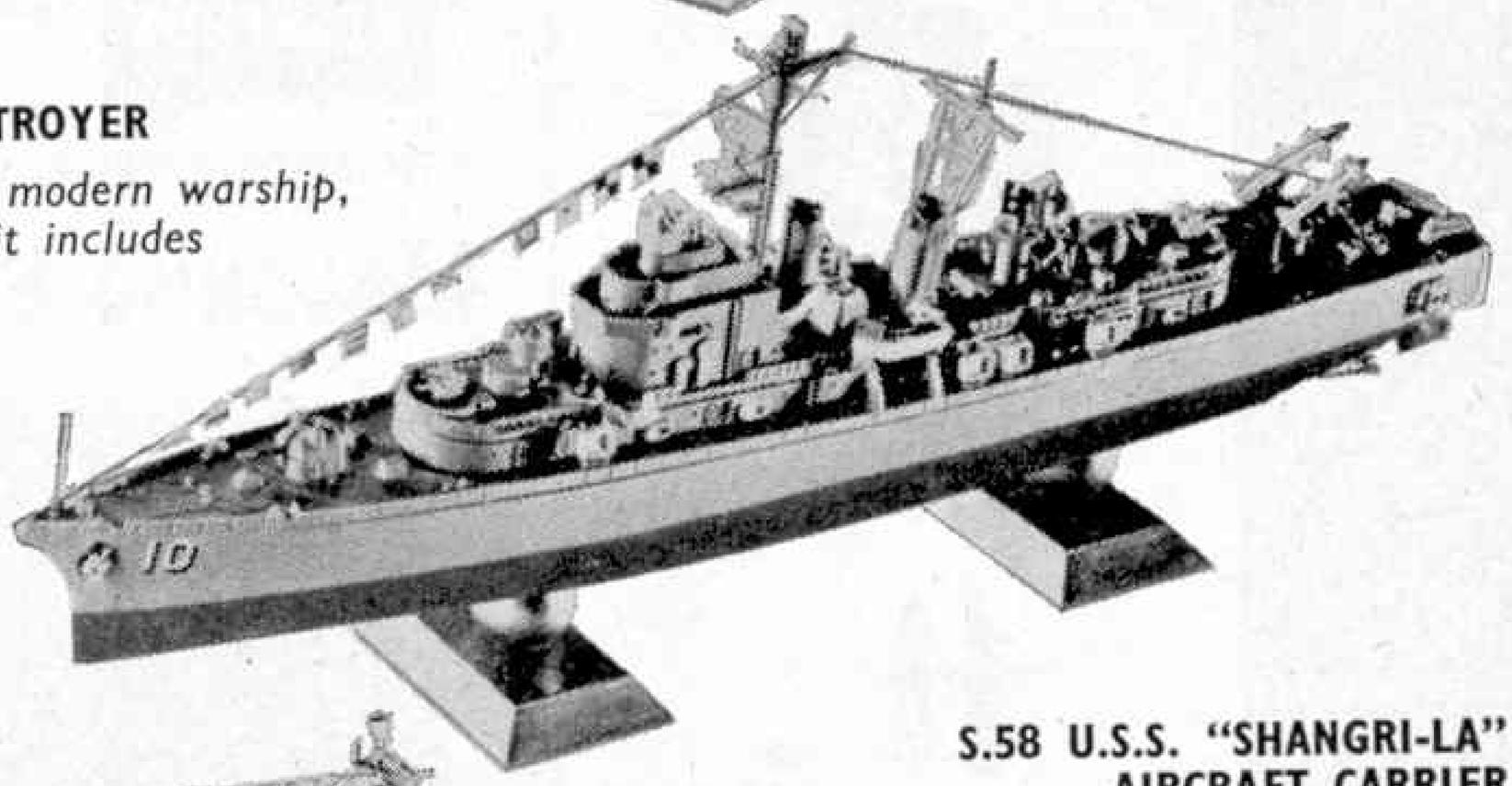
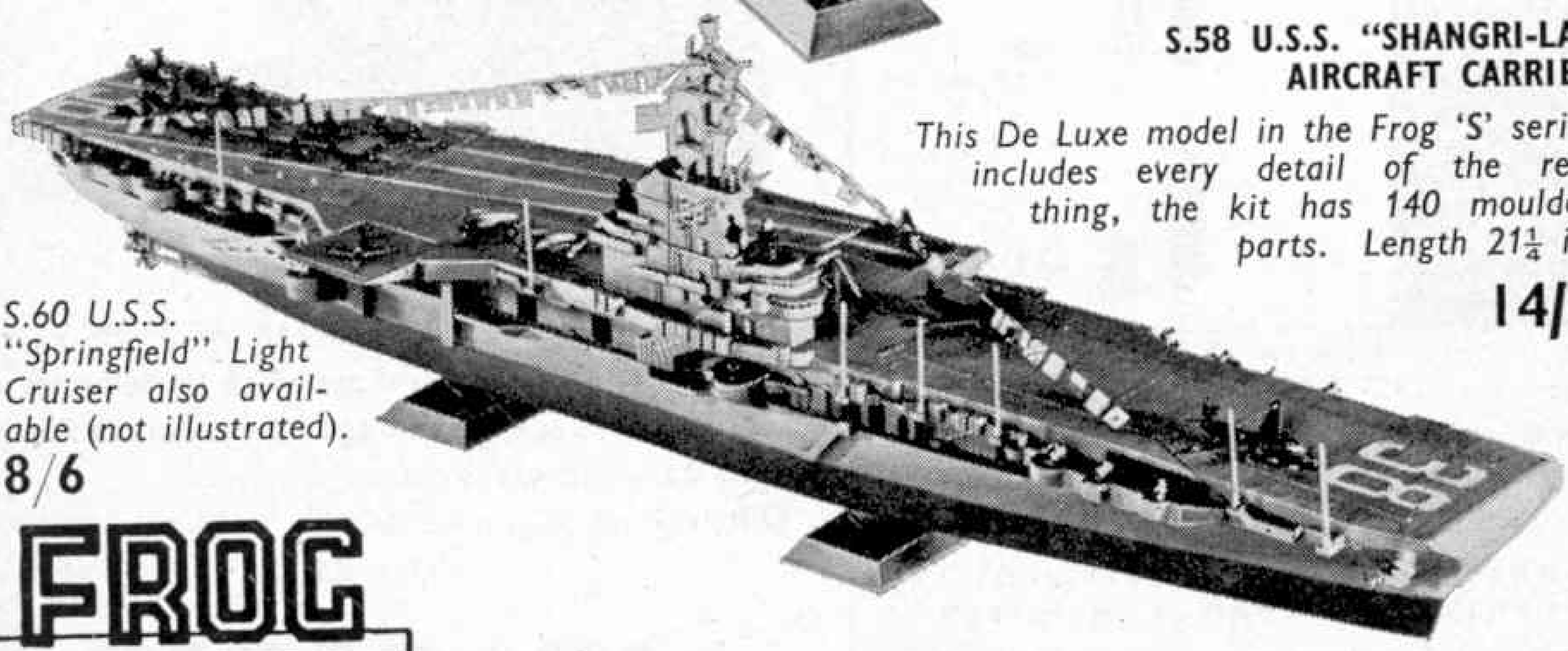
12/6



S.61 U.S.S. "KING" DESTROYER

An exact replica of this modern warship, comprising 79 parts. Kit includes a display stand. Length 12⅛ in.

7/6



S.58 U.S.S. "SHANGRI-LA" AIRCRAFT CARRIER

This De Luxe model in the Frog 'S' series includes every detail of the real thing, the kit has 140 moulded parts. Length 21¼ in.

14/6

S.60 U.S.S. "Springfield" Light Cruiser also available (not illustrated).

8/6

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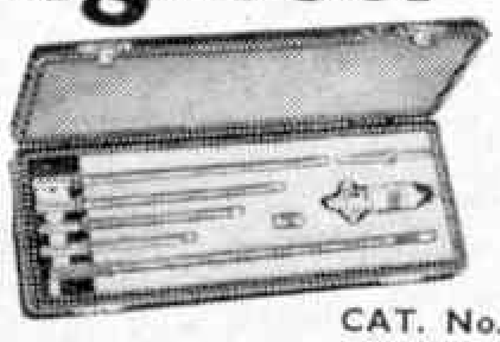

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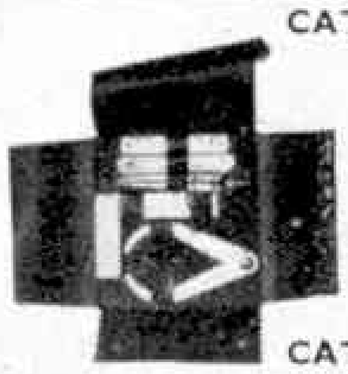

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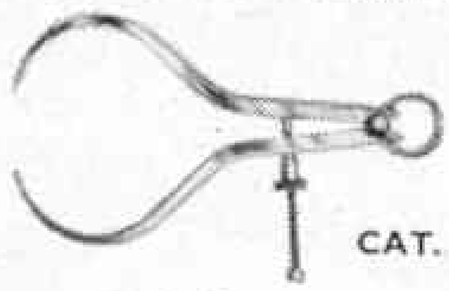

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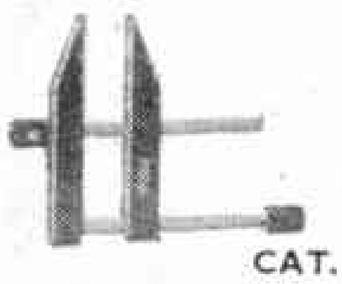

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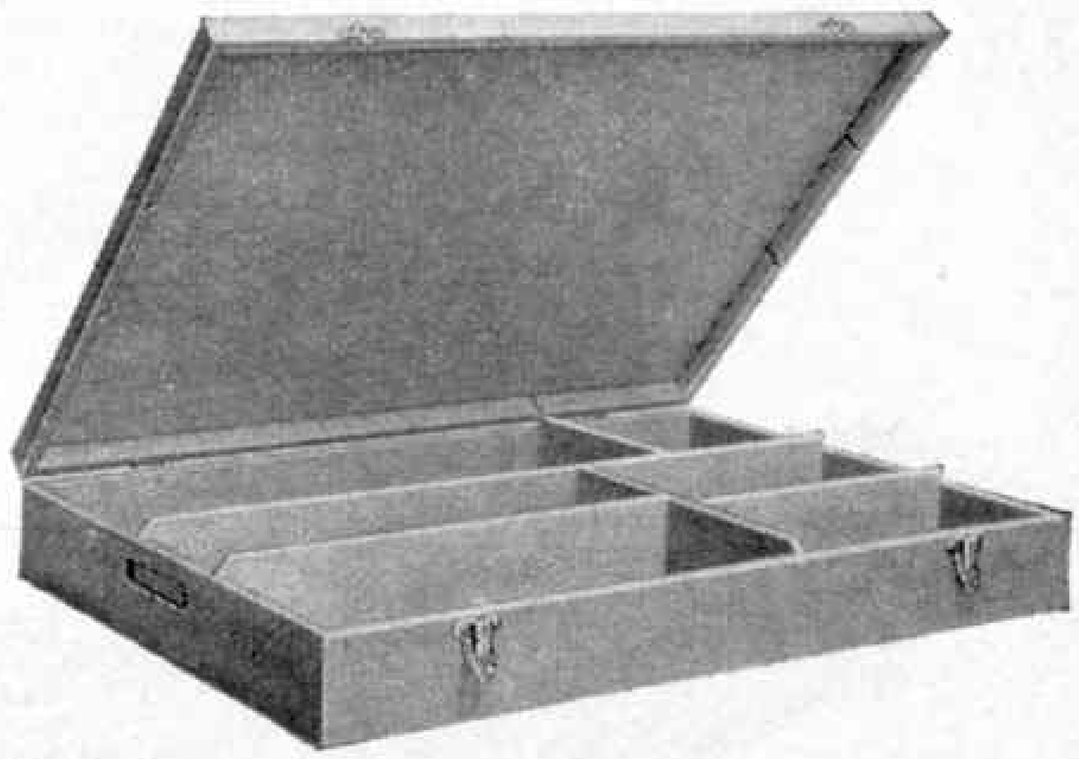

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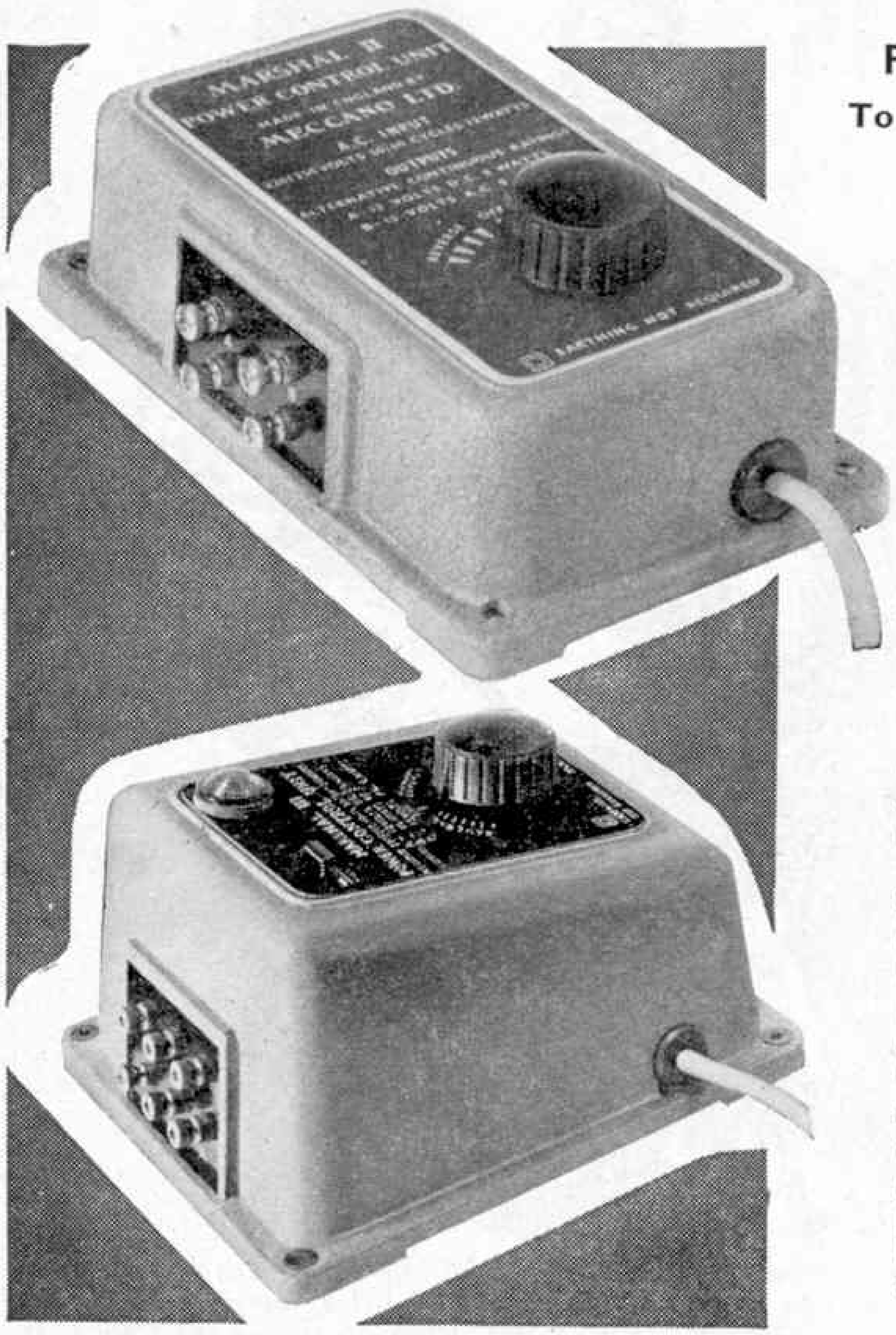

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Next Month: "FLORIDA'S LOST WORLD"

MECCANO MAGAZINE

Editorial Office:
Binns Road
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England

Vol. XLV
No. 6
June 1960

The "M.M." Goes on the Screen

THE production of a popular magazine such as the *M.M.*, with its circulation covering countries all over the world, interests many people, and I quite often receive letters asking for details as to how the *Meccano Magazine* is printed. John Waddington Ltd., who are the printers, have themselves provided a part of the answer to this question by arranging for a coloured film called *The Printer's Tale* to be made at their huge works in Leeds. The film takes up about 20 minutes running time and part of it is given over to sequences showing the *Meccano Magazine* in process of production.

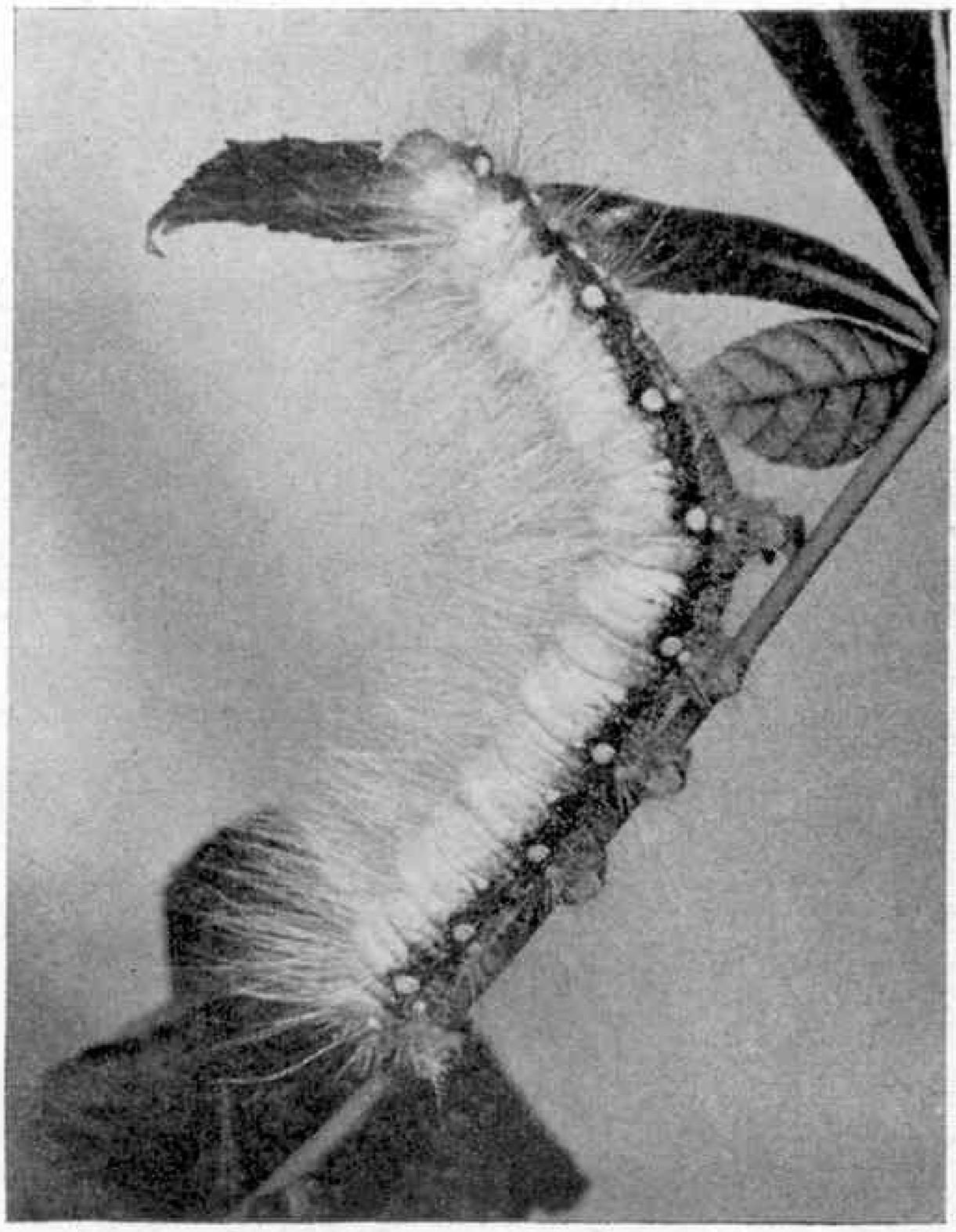
I understand the film is to be put on general release to cinemas throughout the country. Of course, some sections of it will be devoted to other printing activities carried on by Messrs. Waddington, but I am quite sure readers of the *Meccano Magazine* will find it interesting and will want to see it.

Now a word or two about the rather unusual picture which appears on this page. It shows the caterpillar of a beautiful Japanese silk moth known as *Dictyoploca Japonica*, but don't let the name put you off reading L. Hugh Newman's intriguing article on Wild Silk Moths in next month's issue. Mr. Newman runs the famous butterfly Farm at Bexley, in Kent, which was established in 1894, and he receives strange and exotic butterflies and moths from remote places. His hobby is to try to breed them in captivity, and quite often he is successful.

An intriguing story of the treacherous Florida swamplands will also appear next month, together with our usual popular features.

Finally, I draw your attention to the questionnaire on the *M.M.* which you will find included in this issue. I hope all our readers will be good enough to answer the questions asked.

The Editor



Photograph by Andrew E. Carr.

RECALLING THE HEYDAY OF THE DONEGAL LINE

DONEGAL is a thinly-populated and rather bleak, though not unlovely, county in the north-west corner of the Irish Republic. Its deeply-indented coastline, open to the Atlantic gales, is dotted with tiny fishing villages and holiday resorts.

Rivers abound and it was alongside the Finn that the first railway in the county was opened in 1863. This was the Finn Valley Railway laid to the standard Irish gauge of 5 feet 3 inches, connecting Stranorlar with Strabane, just over the border in Northern Ireland, on the main line to Londonderry.

By P. J. LYNCH

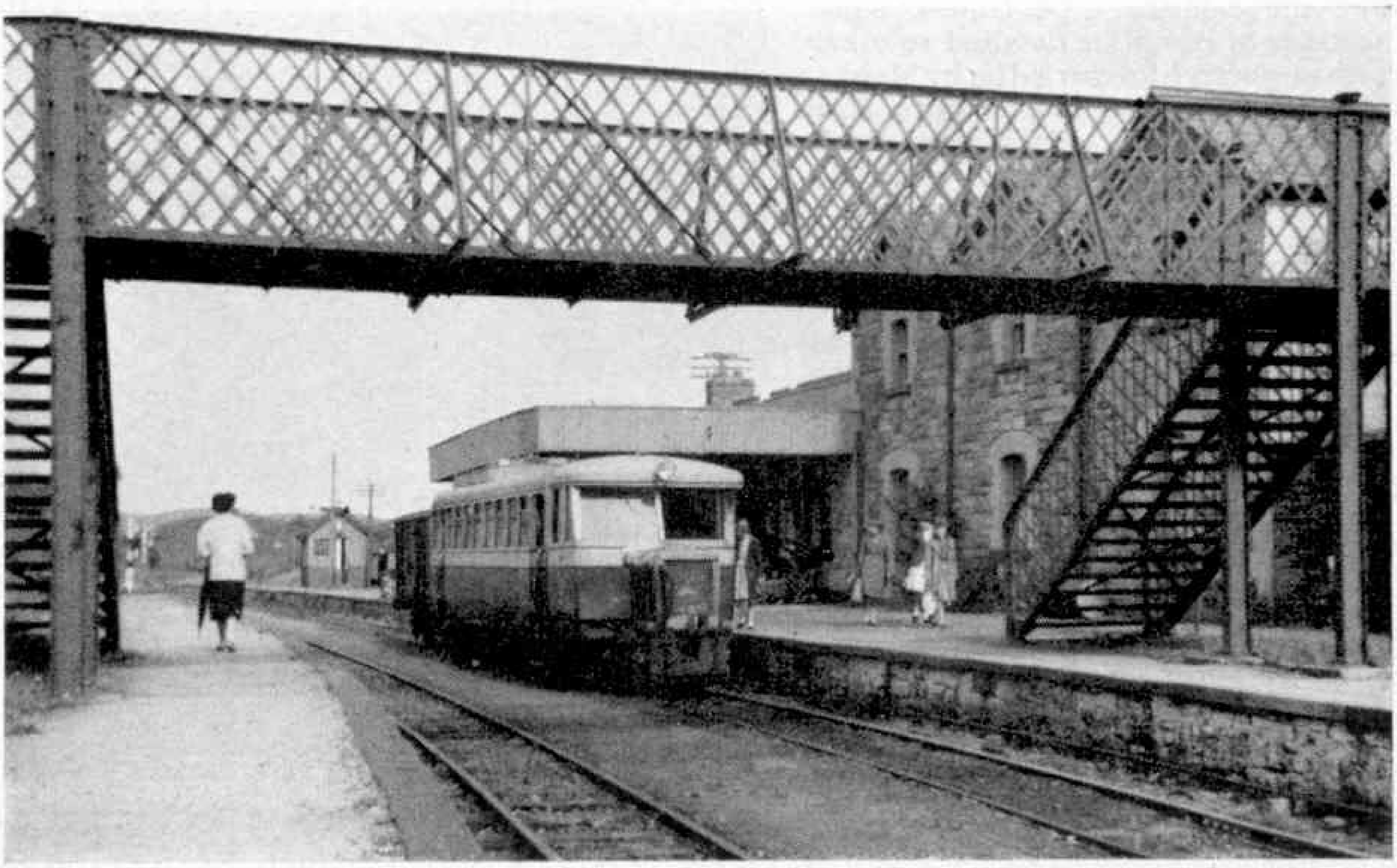
It was not until 26 years later that Stranorlar was connected to Donegal, the county town, by the 3 ft. gauge West Donegal Railway. Financial difficulties were encountered, but branches were laid from Donegal to Killybegs in 1893 and from Stranorlar to Glenties in 1894. During this period the Finn Valley Railway, which had, in 1892, been amalgamated with the West Donegal, was converted to narrow gauge.

In 1900 Strabane and Londonderry, already linked by the Great Northern Railway of Ireland, were connected by narrow gauge too, and in 1905 the Donegal to Ballyshannon line was opened. By this time the powerful Midland Railway in England had become interested in the narrow gauge railway in Donegal and, in 1906, the County Donegal Railways Joint Committee was formed to operate the lines, three members being provided by the Midland Railway and three by the G.N.R.(I).

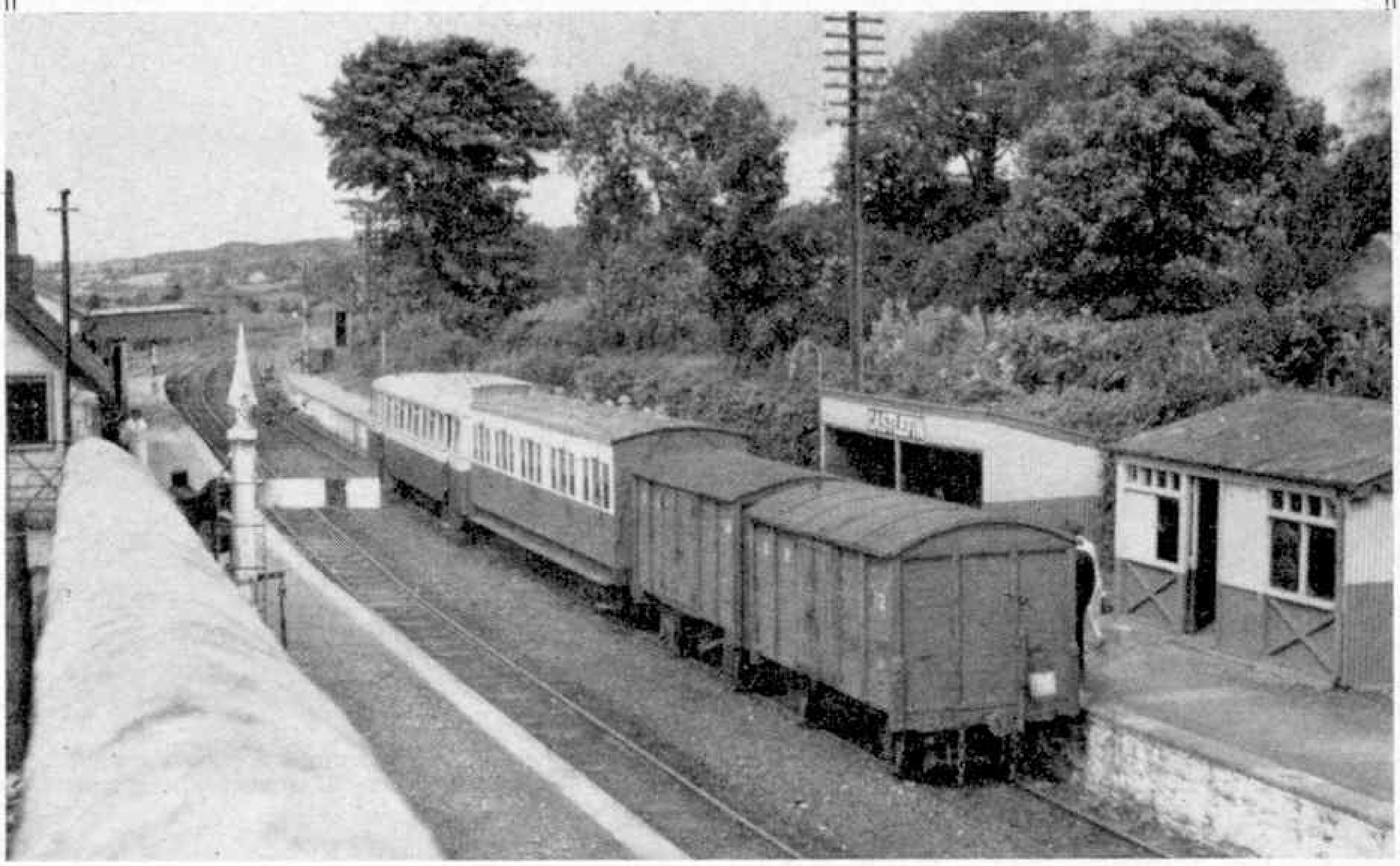
In 1909 the last passenger-carrying narrow gauge line to be constructed in Britain was opened between Strabane and Letterkenny, bringing the total mileage of County Donegal railways to 125 and making it the largest narrow gauge system in these Islands.

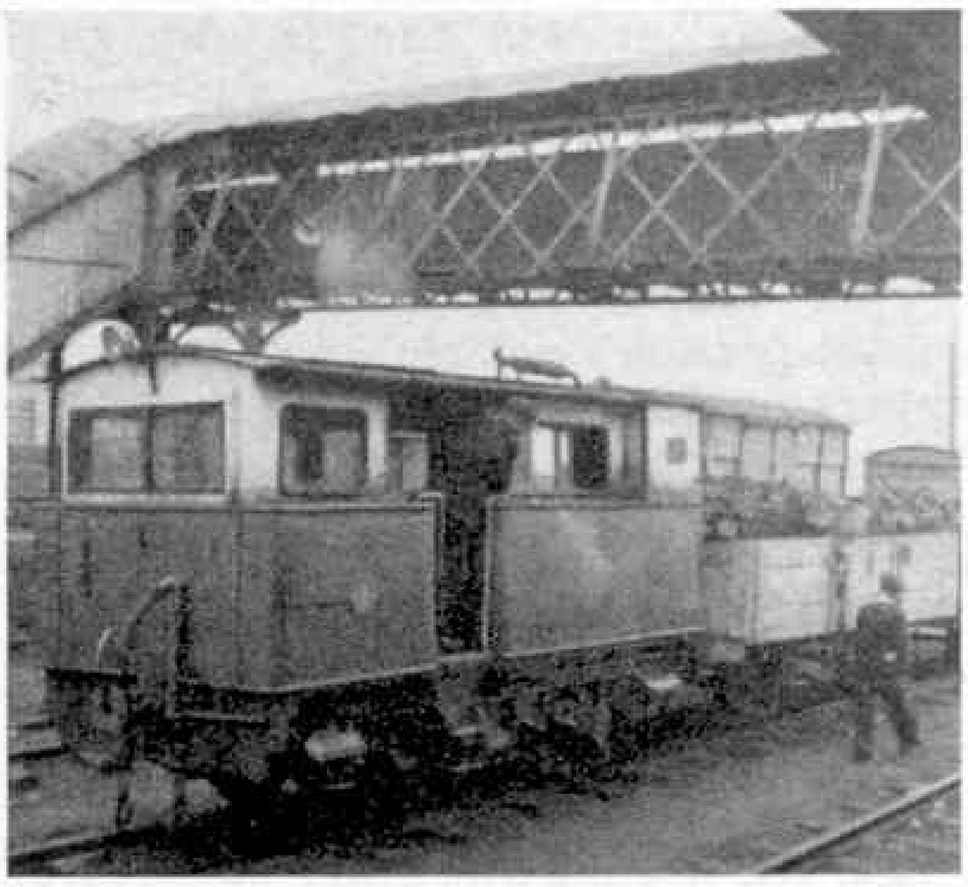
The headquarters were at Stranorlar, a small town boasting a large station with locomotive sheds and workshops nearby.

A diesel railcar on the County Donegal Joint Line standing at Donegal Station on August Bank Holiday, 1959. Photograph by Geoffrey Oates.

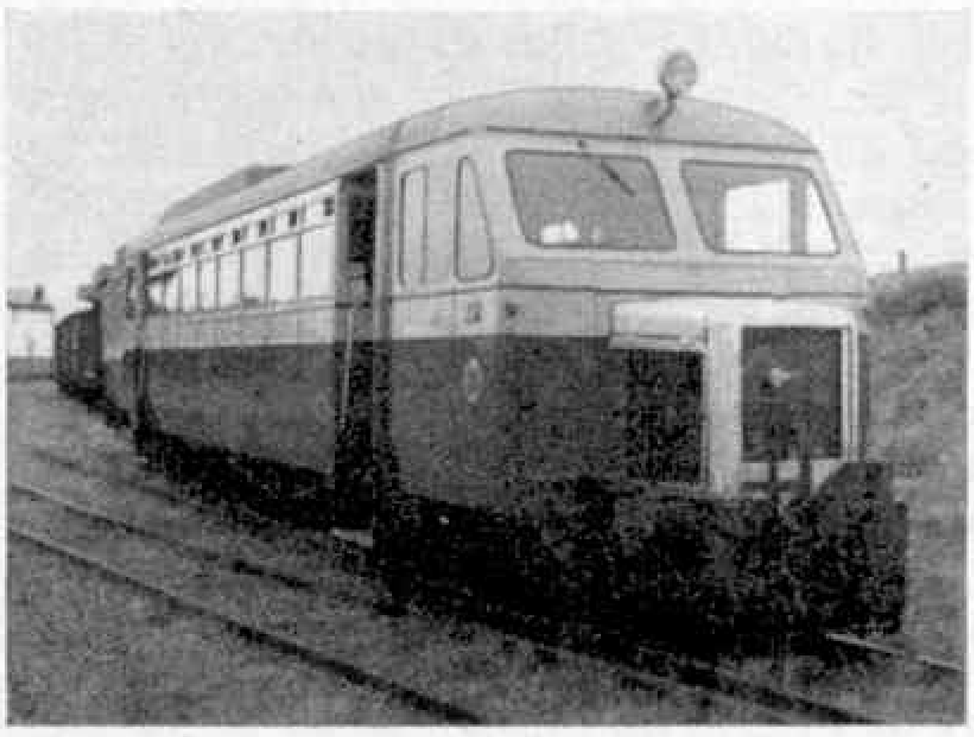


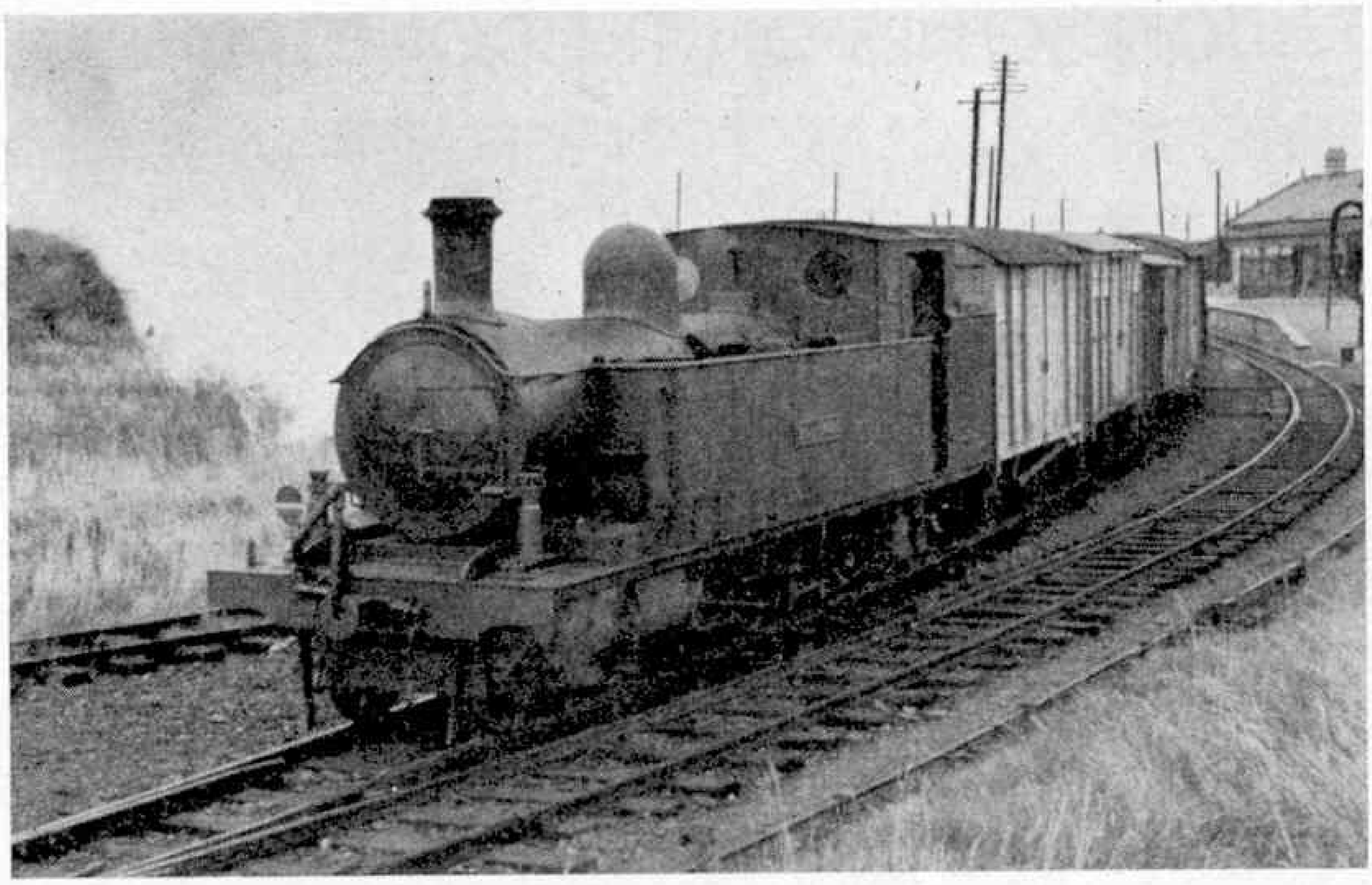
STATION SCENES ON THE DONEGAL ROUTE





Above, a County Donegal railcar halts at Castlefin for Irish Republic Customs examination; Below, a typical County Donegal scene showing railcar No. 14 at a station; At left (top) "Phoenix", diesel driven, shunts at Strabane and (below) a characteristic view of the railcar No. 18.





An evening freight for Lifford leaving Strabane behind 2–6–4 Tank No. 2, "Blanche". Photograph by P. J. Lynch.

Perhaps the most interesting stretch of line was that from Stranorlar to Donegal, through the Barnesmore Gap with its long, formidable gradients and howling winds. Beyond Donegal the branch to the fishing village of Killybegs afforded some lovely views of Donegal Bay.

Unlike some of the narrow gauge railways the County Donegal did not keep its original locomotives to the end. The first 3 ft. gauge stud, operated by the West Donegal, was scrapped by 1926 while a later batch built in 1893 had all gone by 1937. Two rare 4-4-4 tanks built in 1902 lasted only until 1933, but the next engines to appear were more successful. They were four 4-6-4 tanks built by Nasmyth Wilson & Co., in 1904. Finally numbered 9 to 12 they bore the names of Donegal rivers Eske, Owenea, Erne and Mourne.

Even more competent were the 2-6-4 tanks, built by the same firm in 1907, which later became Nos. 4-8, respectively named *Meenglas*, *Drumboe*, *Columbkille*, *Finn* and *Foyle*. Finally, in 1912, came a batch of three superheated 2-6-4 tanks, the first narrow gauge locomotives in Britain to be so equipped. Again Nasmyth Wilson & Co. were the builders, and the success of the superheated engines led to the same firm's earlier engines being similarly fitted. The 1912 batch finally becomes Nos. 1 to 3 and were named *Alice*, *Blanche* and *Lydia* respectively, thus perpetuating the names of the original West Donegal locomotives.

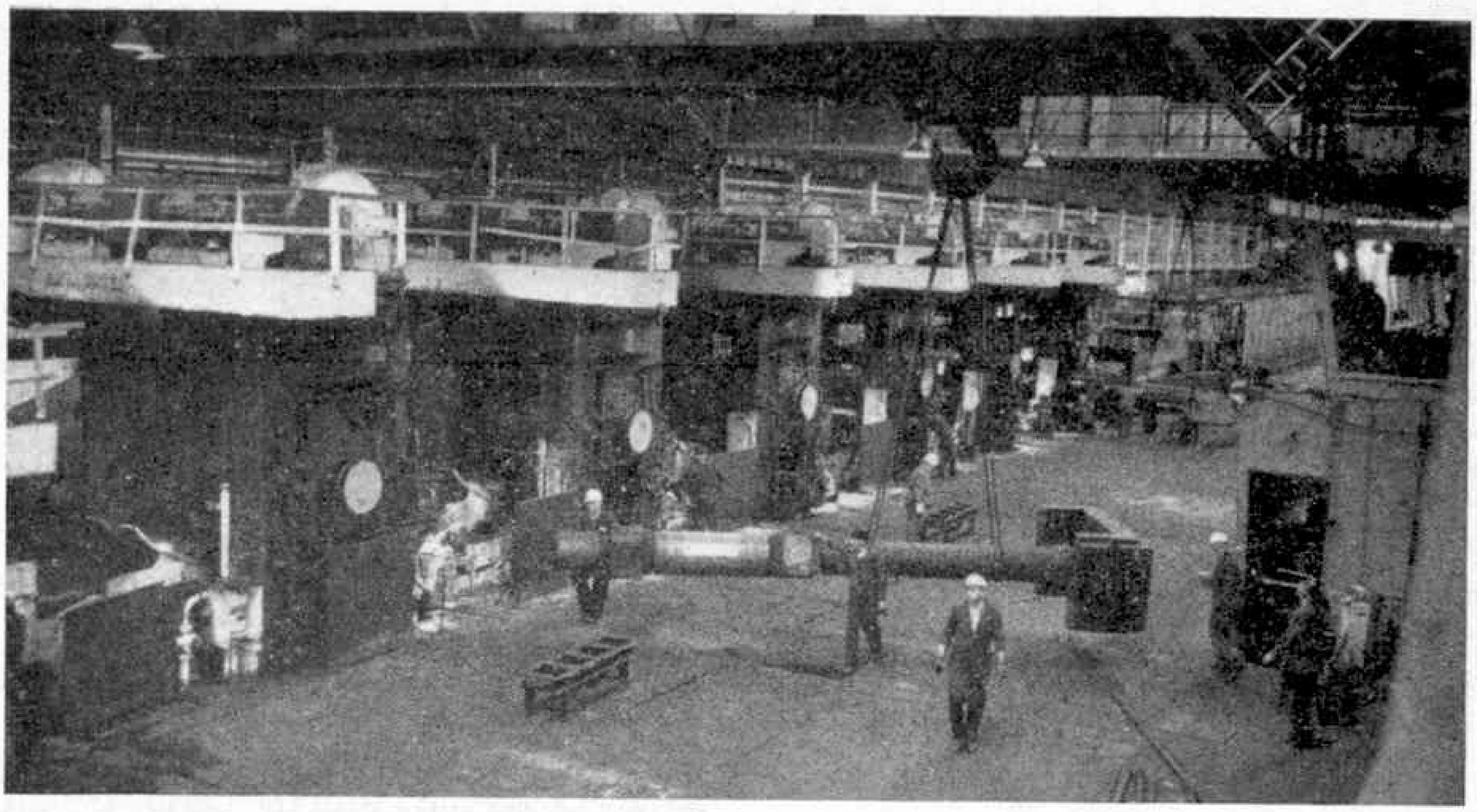
When the County Donegal Railways were closed last year seven of the Nasmyth Wilson tanks survived, although only two or three were in use for freight and occasional excursion work, and most handsome they looked in their geranium red livery.

During the General Strike of 1926 the County Donegal used a six-seater petrol-driven inspection vehicle for carrying passengers on the Glenties branch. This proved such a success that the Committee bought two petrol railcars from the Derwent Valley Light Railway, in Yorkshire, and later three more railcars, all with petrol engines, were built for the line. This small fleet of railcars was numbered 1 to 6.

Held 30 Passengers

In 1931 No. 7 appeared and this was the very first diesel railcar to operate on a British Railway. Like its twin, No. 8, it had a 74 horse-power Gardner engine and carried 30 passengers. Railcars 9 and 10 were again Ford-engined petrol vehicles, being actually rebuilds of road buses, but No. 12, which entered service in 1934, was a bogie diesel railcar, the forerunner of all those subsequently built for the County Donegal Railway. These were numbered 14 to 20 and appeared between 1935 and 1950.

Unfortunately No. 17 was destroyed in an accident in 1949 and in the same year No. 18 was burnt out, later *(Cont. on page 318)*



Hot Strip Mill Roll Change

By the Editor

BRITAIN has always had a proud record as an industrial nation and one of the spheres in which she has particularly shone has been in the production of steel. The front cover of this month's *M.M.* takes us right into the heart of the steel industry and sets a graphic scene in colour. The photograph on which the cover is based, and the picture at the top of this page, are both reproduced by courtesy of *Ingot*, the quarterly magazine of Richard Thomas & Baldwins Limited, which published them recently under the heading "Men at Work." There could be no heading more apt, for the production of steel is indeed real men's work.

The photographs depict scenes at the firm's hot strip mill at Ebbw Vale in South Wales. There, on most days, the mill itself comes to a halt as often as once each shift. As the last of the scheduled output of strip steel is moving along to the "finishing stands" in the final stages of the run, the mill is stopped, isolation switches are thrown and warning flags displayed to show that a "roll change" has begun.

This change is necessary because, after carefully-calculated tonnages of steel have been rolled, the surfaces of the rolls through which the steel passes begin to wear down and there is an increasing tendency for the massive steel strip to become thicker in the centre. To offset this the rolls are taken out, as necessary, for re-surfacing and are replaced with new or re-ground rolls of varying hardness.

In charge of the operation, planned with military-like precision, is the "Roller." His crew of six form part of a team of 12 men who, in addition to crane drivers, complete the change. During the operation a number of rolls may have to be changed in the various finishing stands through which the steel strip runs. Four latches in the mill housing secure each roll and while these are being displaced the "gun" is brought into position. The gun is, in fact, a huge counterbalance weight attached to a long barrel, grooved on the outside, which can clamp firmly to the end of a roll. Until the roll assembly—which weighs about five tons—is actually fitted into the end of the barrel the counterbalance—which weighs about 12 tons—is held on a special chair. Once the roll is clamped by the gun the balance of the whole assembly is obtained by manœuvring the position of the crane slings in the grooves around the barrel.

Our front cover shows a worn down work-roll being removed from the mill housing; in the panoramic view above the gun, complete with roll and counterbalance, is seen slung from an overhead crane. When all discarded rolls have been replaced, the warning flags are removed and the mill starts to roll again.

The twin headlamps on the 140 m.p.h. Gordon are an unusual and distinctive feature. Production is planned to commence in September, at the rate of 25 a month.

Road and Track

By Peter Lewis

THERE are very few full-time professional racing drivers, and 30-year old Innes Ireland is one of them. The No. 1 driver in Colin Chapman's Team Lotus devotes his whole time to motor-racing and, if the Formula I Lotus proves reliable this year, then Ireland should be extremely well placed in the World Driver's Championship. He is undoubtedly in the top flight now, eight years after his first competition appearance at Boreham, Essex in 1952, when he drove a 3-litre Bentley.

He did not have much time to go motor-racing in 1953 for he was with the 1st Battalion Parachute Regiment in Egypt, but in 1954 the ex-paratroop officer purchased a Brooklands Riley Nine—the car with which Donald Healey won the 1939 Alpine Trial—and drove it at Silverstone in the Six Hour Relay Race.

So, you see, the man who handled a car for the first time at the age of 13—three years before he held a motor-cycle licence—is by no means a newcomer as some people have suggested. In fact, although he did not race in 1955, he was back with a vengence in 1956, racing a Lotus Eleven at the end of the season as well as the Riley.

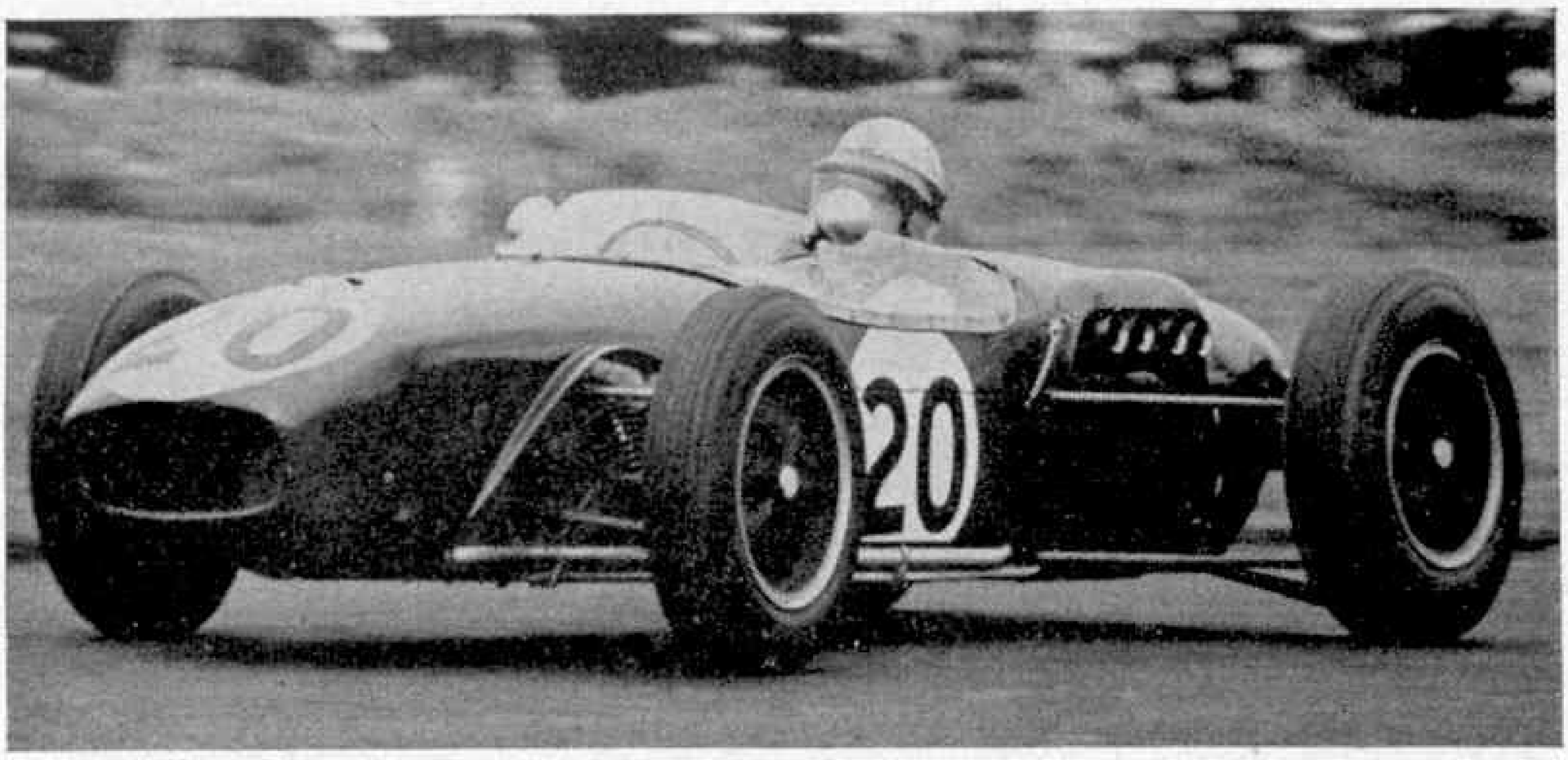
The following year, Ireland practically swept the board at B.A.R.C. Goodwood Member's Meetings with the Lotus, and his reward was the Brooklands Memorial Trophy for 1957. He drove Tommy Sopwith's Formula 2 Cooper as well and it was during this season that Colin Chapman noticed the Scottish-born driver and gave him "works" drives on Lotus sports cars in Sweden and at Spa, Belgium.

In 1958, Innes Ireland really came into his own. He not only raced a new Mark Eleven Lotus Series 2, but also drove David Murray's Ecurie Ecosse D. Type Jaguar, Lister Jaguar and Tojeiro. Ireland attributes much of his success in 1958 (15 firsts and 12 seconds) to Brit Pierce, the mechanic who joined him at the beginning of the season. Pierce, who used to be the late Mike Hawthorn's mechanic, was with him until the end of the 1959 season, and as Ireland says "He was an absolute gem, worked like a Trojan and gave me tremendous confidence".

Like most other drivers dedicated to the sport, Ireland appreciates the full worth of those hard-working, little-publicised body of men, the racing mechanics, who keep the cars going.

Last year Ireland had his first Formula I drive in the Dutch Grand Prix at Zandvoort, where he finished fourth and netted his first World Championship points. But it was an unhappy season for Lotus and the team drivers. Dogged by mechanical misfortunes, Ireland was severely handicapped.

He had fun at Le Mans though, a circuit disliked by so many drivers, when he drove the Ecurie Ecosse D. Type and "Really enjoyed it". Ever since he read years ago, Tim Birkin's famous book "Full Throttle", Ireland longed for the day when



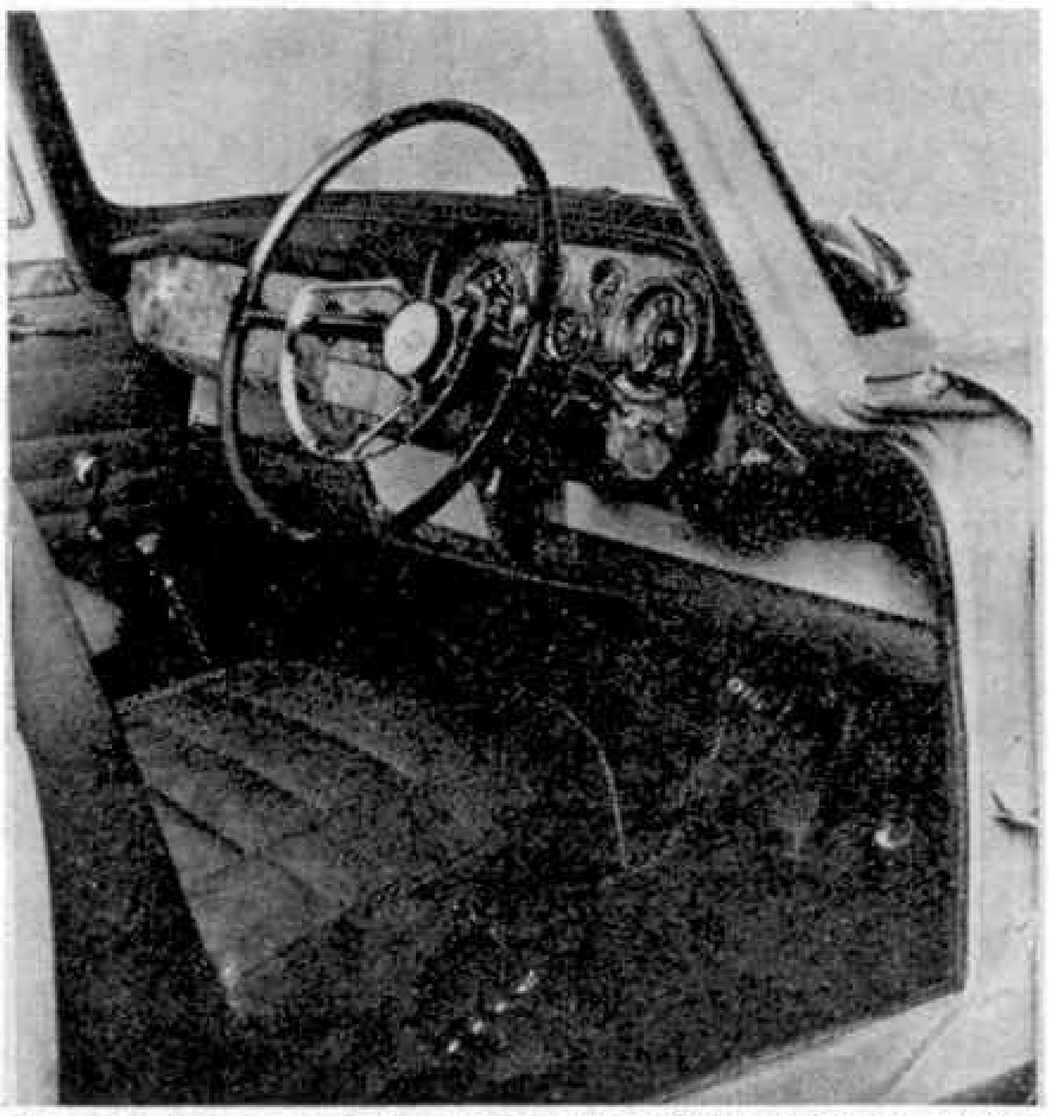
Innes Ireland, leader of Colin Chapman's Team Lotus, seen in action at Oulton Park. He must be seriously considered for World Championship honours this year.

he too, could race on the circuit of the Sarthe.

Now, the man whose performances at Syracuse, Oulton Park and Goodwood earlier this season made the enthusiasts sit up and take notice, is ready to have a crack at the coveted World Championship. He is signed up with Chapman for Formula 1 and Formula 2 and will probably drive a Lotus Elite, with a 2-litre engine, in the Le Mans 24-Hour Race this month. Incidentally, his personal transport is a white Elite.

As a driver, Ireland has a relaxed yet determined style and plenty of fight, preferring the true road circuits such as Syracuse, Spa and the tortuous Nurburgring to airfield circuits like Silverstone. He does not model his style on any of the top flight drivers of past or present. "I drive the way I feel it is safe," he says.

As a family man, with a wife and 18-months' old daughter, he is charming and unaffected, and loth to recognise his own ability for what it is.



The driving compartment of the Riley 4 Sixty Eight, which has a full set of instruments laid out in an attractive facia panel.

The Gordon

Prowling around the Paddock at Goodwood on Easter Monday I found Colin Chapman and ex-Le Mans Jaguar driver Tony Rolt, together with a group of enthusiasts, peering at the prototype of the Gran Turismo Gordon. This exciting newcomer to the ranks of fast machinery, which will be assembled by Peerless Motors Ltd., at Slough, made its debut at the Geneva Motor Show in March and was a centre of attraction within a few minutes of the show opening.

The Gordon, which will be powered by a 4.6 litre Chevrolet engine developing 230 b.h.p. in single carburetter form, has bodywork by Bertone of Turin on a space frame of square section tubing. It has Girling disc brakes all round, de Dion rear suspension and a four-speed, close-ratio gearbox with remote control gear lever. The Gordon accelerates from 0–50 in 5 seconds, 0–60 in 6 and gives almost 120 in third gear and 140 in top gear. The car handles like a thoroughbred.

The interior of this rakish, purposeful two-door, four-seater, which will be produced mainly for the American market, is in the luxury class. The price is in the same class: between £2,500 and £2,750, retail and ex-dealers. *(Continued on page 316)*

Southend-on-Sea Pier, a view from the seaward end. This aerial photograph by Aerofilms Limited is published through the courtesy of Southend-on-Sea Corporation.

Leslie E. Wells relates . . .

The Story of Britain's Piers

THE British are the people of the piers. No other country in the world indulges in pier-promenading. But the British, and particularly the English, are so fond of their seaside piers that many people spend almost the whole of their holidays strolling along them and being entertained there.

Brighton was the pioneer of the pier, building the first in this country as long ago as 1822. The example was soon followed on a wide scale, and today the coastline of 4,600 miles is adorned with 300 piers, all designed to provide pleasure for the holiday maker.

Even today, when the skill of the engineer has become a legend, the building of a pier presents immense difficulties. In fact, pier-building remains a complex undertaking of the first magnitude, being set around with countless problems.

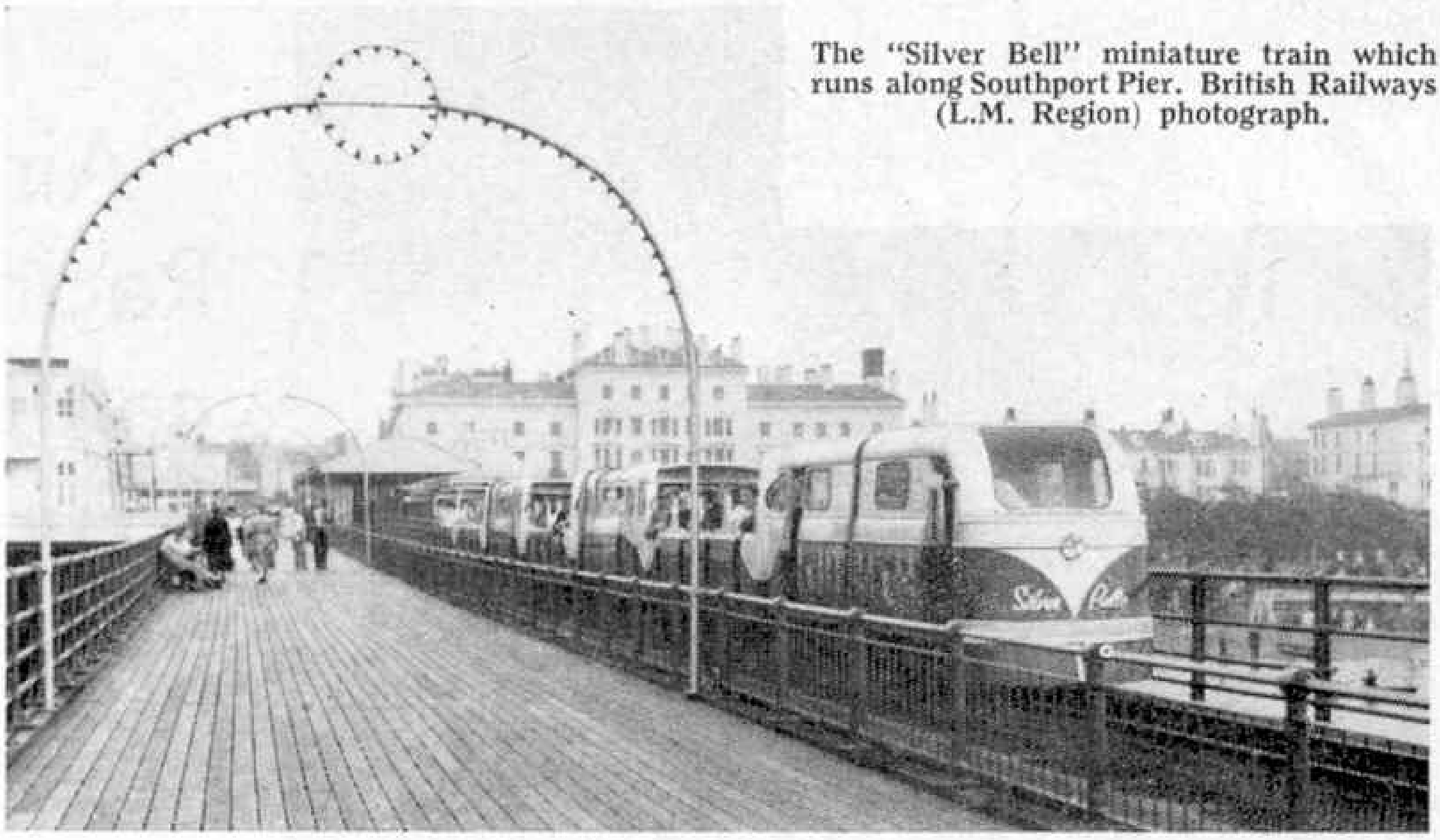
The bed on which the pillars rest has to be excavated against the constant and regular interruptions of the tide and often work must go on below the waves. Exhaustive tests have to be carried out to ensure that the structure will stand up to high seas and fierce winds. Even when the pier is completed, most precise tests must be made to ensure that it can be safely opened to the public. The whole work must be faultless, for any weakness might well result in a major catastrophe. It is not surprising that the firms which undertake the task of building piers still remain few in number.

In the space of a single season, 1,000,000 visitors stroll and sun themselves on the big piers, and a record was set up at Brighton's Palace Pier in 1947 when 3,000,000 people passed through the turnstiles.

Although the building of piers presents obvious difficulties, the old Brighton Chain Pier was built, so its makers claimed, to stand for 1,000 years. It was not their fault, either, that it lasted by no means as long as that, for its 1,136 feet had the support of massive oak piles. Even these, however, failed to withstand the savage gale which swept Brighton in December 1896 and the pier was destroyed.

It had proved so popular that it was replaced as speedily as possible. The present Palace Pier was opened in 1899, having cost £137,000 to build. A similar structure today would cost anything up to £3,000,000.

Last year, nearly 250,000 people paid to walk on the Palace Pier, paying well over £5,000 a day for the privilege—most of the money being in pennies. Yet such an income is none too large, for piers are



The "Silver Bell" miniature train which runs along Southport Pier. British Railways (L.M. Region) photograph.

highly expensive things to run and maintain.

The Palace Pier needs 8,500 electric lamps each season, and these cost well over £1,500. Employees' wages take £25,000, and the bands cost up to £5,000. At the height of the season 1,000 people dance in the open air, and a further 2,000 pay to sit and listen to the open-air orchestra.

A mile away is Brighton's West Pier, and there are other piers further along the coast. All need considerable support to make them pay, for the private companies who own them do not spare money in their determination to make them attractive.

Most piers are fitted out like luxury liners, with first-class restaurants, ballrooms, theatres, sun-lounges and fun-fairs. A single coat of paint costs up to £5,000. In most cases half a pier's structure is scraped, chipped and repainted each year by the pier's own painters. If the whole surface to be covered receives a couple of coats of paint, about 1,000 gallons of colour are spread over it.

In addition to the painters, the pier-owners employ a small army of metal workers, blacksmiths, plumbers, electricians and carpenters. With so many feet pounding it the deck is subject to swift wear, and the cost of replacing a single yard of it no less than £20. This private staff, which can range from 50 to 100 men, according to the size of the pier, is engaged throughout the whole year and their wages alone may absorb as much as £50,000.

The summer season, however, calls for from 200 to 300 *(Continued on page 318)*

The Palace Pier, Brighton. Photograph: Brighton Corporation.

Air Racing can be Fun

By John W. R. Taylor

Claude Grahame-White with a passenger in his biplane, ready to start. A photograph taken at an early flying meeting at Bournemouth.

ON the third of this month, readers of the *M.M.* who live anywhere along the straight line route from White Waltham aerodrome, in Berkshire, to Cardiff should be able to see something of the air race for the new Grahame-White Memorial Trophy.

It is fitting that Claude Grahame-White should be remembered in this way, for just fifty years ago he took part in the first great cross-country air race. The prize of £10,000 had been offered by the *Daily Mail* in 1906 to the first pilot who flew between London and Manchester within a period of 24 hours.

Tremendously Exciting

At the time, such a flight seemed far more impossible than does a rocket-trip to the Moon today, and the editor of a rival newspaper wrote sarcastically that he would give £10,000,000 to anyone who did it. Fortunately for him this rash promise was not taken seriously, because the *Daily Mail* prize was won on April, 27–28, 1910.

After four years in which nobody attempted the flight, it developed suddenly into a tremendously exciting race between two of the world's greatest pioneer pilots, Grahame-White of England and Louis Paulhan of France, both flying 50 h.p. Farman biplanes. In an effort to catch the Frenchman, who had started first, Grahame-White made one of the first night take-offs in history; but Paulhan won, adding that he would not have done it again for ten times ten thousand pounds!

All Britain followed that race with bated breath; but I wonder how many people will take a real interest in this month's race from White Waltham to Cardiff, or even the National Air Races at Coventry next month? The answer is, probably very few, for much of the old excitement has gone from air racing in Britain.

The answer is not hard to find. A 50 h.p. biplane like the Farman, with a speed of about 45 m.p.h., may sound tame in this supersonic age; but there are many modern enthusiasts who would find it far more interesting than the aircraft which take part in present-day British air races. A high proportion of these are of pre-war or wartime vintage, and the 1959 King's Cup air race was won at a speed of only 143 m.p.h. Several of the other contestants were not capable of 100 m.p.h.

Problems Overcome

Anyone who has seen the air races will know that, even at such speeds, they can provide some thrills. If the handicapping has been done well, it is not unusual to have several machines approaching the last pylon together, with the faster ones overtaking those in front. *But the whole thing could be made far more exciting and interesting if we got back to the original purpose of the King's Cup, which was to stimulate the design and construction of better aeroplanes.*

The Americans have had to face similar problems in their air racing, and it is interesting to see how they have overcome them.

Back in the 1930's, prize money was so great that safety often seemed to take second place to sheer power and speed. Typical of this era was the Gee Bee Super Sportster in which Jimmy Doolittle won the 1932 Thompson Trophy Race at an average speed of 252·6 m.p.h. Its fuselage was a tubby barrel of the same diameter as the huge 800 h.p. Wasp radial engine. The wings spanned only 25 feet and their area of 75 square feet seemed barely sufficient to keep such a bulky machine in the air.

In 1933 this Gee Bee crashed and killed its pilot. There were other equally "hot" aeroplanes to take its place, but designers began to realise gradually that there were ways of achieving high speed other than by increasing power and pruning wing area. The aircraft which, more than any other, heralded this new approach to air racing came from France. It was the little Caudron C–460, which had a Renault Bengali engine of only 330–380 h.p., the low power offset by the use of a variable-pitch propeller and drag-reducing features such as a retractable undercarriage and oil radiators flush with the aircraft's skin. Piloted by Michel Detroyat, it took the important Greve and Thompson Trophies out of America, for the first time, in 1936.

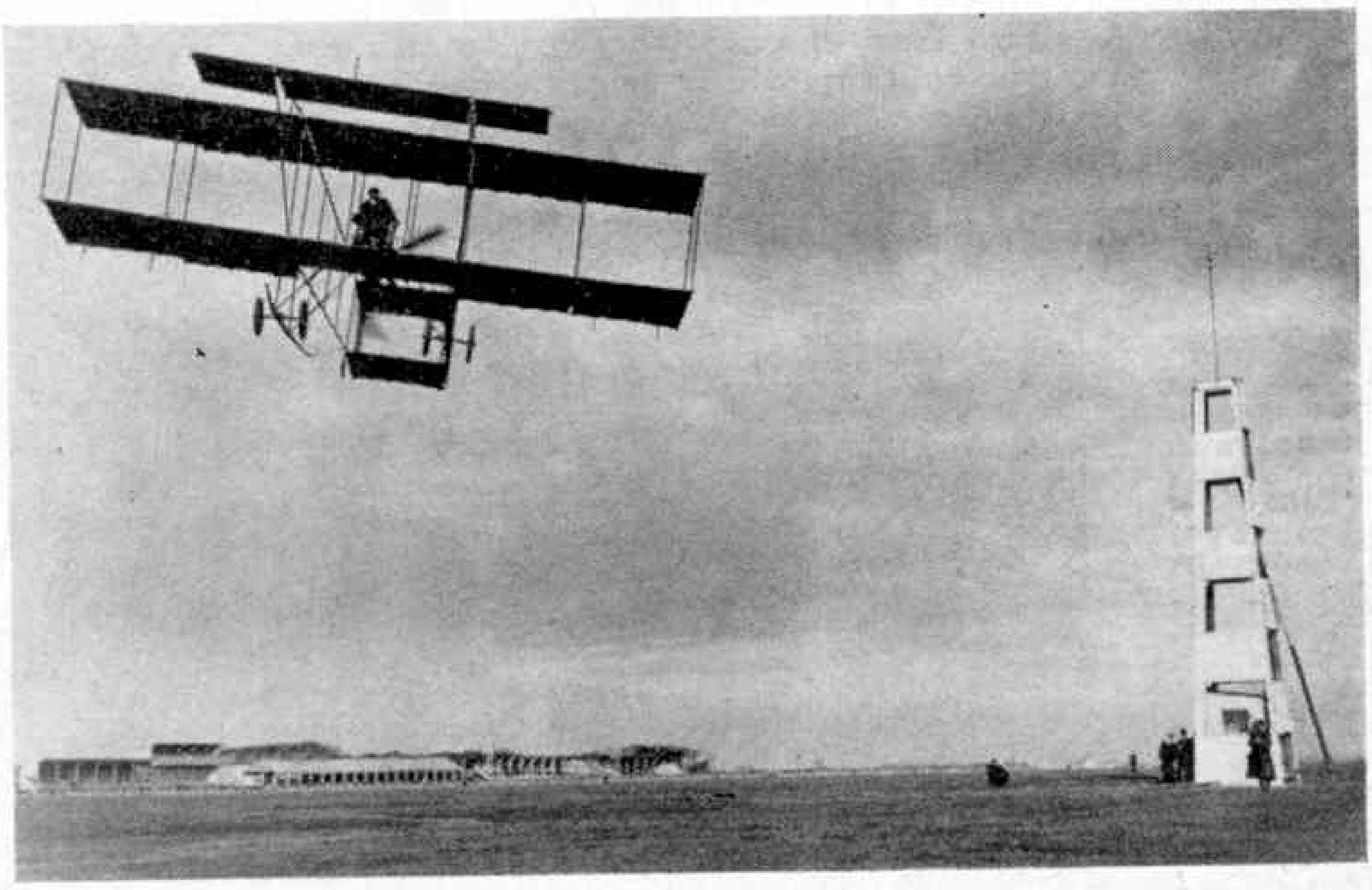
Maximum Protection

The full effect of this substitution of science for brute force was not felt until after the war. Much-modified ex-U.S.A.F. fighters and officially entered jet aircraft dominated the 1946 National Air Races. Then, in 1947, an entirely new type of racer appeared on the scene. The Goodyear Company presented a trophy for a race open only to aircraft which conformed to a rigid set of rules.

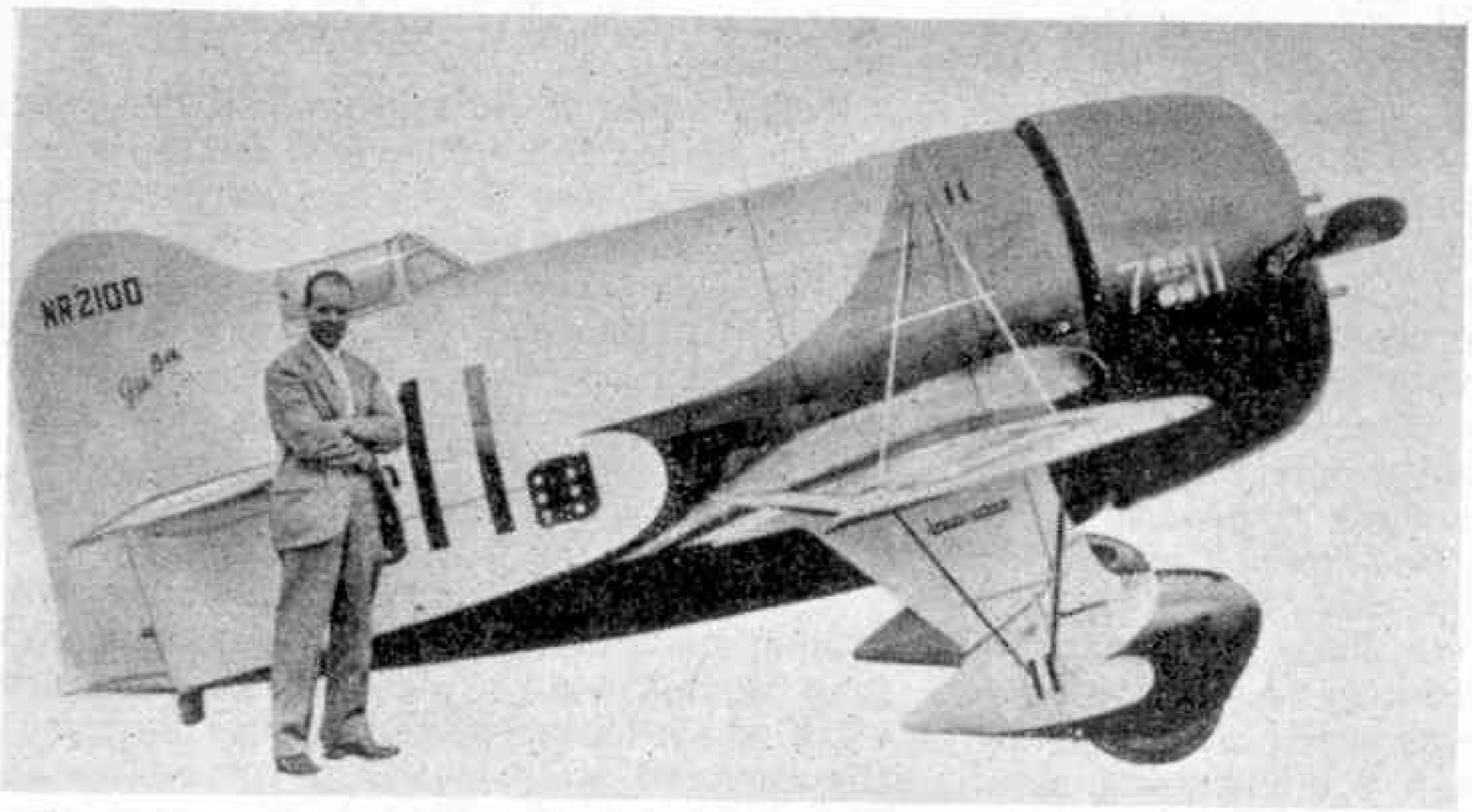
Engines had to be ordinary off-the-shelf models of not more than 190 cubic inches displacement, and the 85 h.p. horizontally-opposed, four-cylinder, air-cooled Continental C85 soon became accepted as standard. The empty weight of the aircraft had to be more than 500 lb., to ensure a sturdy structure. Wing area had to be at least 66 square feet. The undercarriage had to be fixed. Other rules ensured maximum protection for the pilot in an accident.

Although these strict rules guarded against structural failure and freak designs, they did not result in a collection of aircraft all of which looked alike. On the contrary, the thirteen midgets which turned up at Cleveland for the 1947 race varied tremendously in shape, the result of the rules being, as hoped, that the race was won by the skill of the designer and pilot instead of by relying on the power of the biggest engine available. First prize of 7,000 dollars was won by Bill Brennand in Steve Wittman's *Buster*, which managed to average nearly 166 m.p.h. on only 85 h.p.

Even when a growing list of fatal accidents in other events led to abandonment of the National Air Races, the little Goodyear racers continued to fly. Race meetings were organised by the Professional Race Pilots' Association (P.R.P.A.), and although the prizes were much smaller than before, this was offset by the fact that a man with some experience of aircraft construction and reasonable design know-how could build a midget for about £1,000. In fact, Garland Pack built his fifth racer, the *Grey Ghost*, for well under £700.



Henry Farman, another famous pioneer pilot, flying a biplane of the kind used by Grahame-White in 1910.



Granville Gee Bee R-1, of 1932, with James H. Doolittle.

Because these little racers are fairly evenly matched, there is always plenty of excitement when they fly. As a result, it was by no means unusual when 20,000 spectators turned up at the Fort Wayne, Indiana, meeting last year. They included the occupants of 500 visiting private aircraft, which ranged from a home-built Stits Flut-R-Bug to a converted B-25 Mitchell bomber.

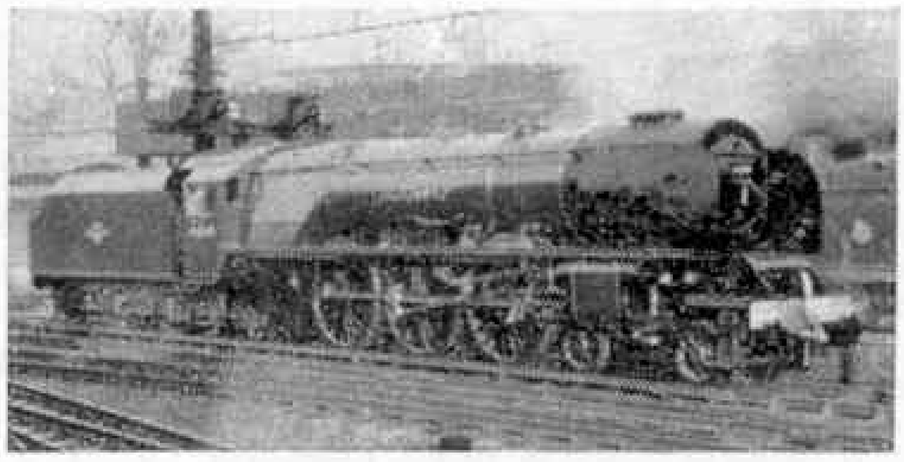
Big Contribution

In the past, racing has contributed a great deal to aviation progress. It is well-known that the R.A.F.'s Spitfire fighter was based largely on experience gained with the Supermarine Schneider Trophy seaplanes. Less well-known is that the cantilever spring steel undercarriage legs found on Cessna lightplanes, and many others, were first developed by Steve Wittman for his pre-war *Chief Oshkosh* racer. The performance squeezed out of the Continental C85 engine has also been of value to the manufacturers, who could hardly have expected that it would continue to work perfectly even when run for long periods at 3,800–4,000 r.p.m., instead of the normal 2,575 r.p.m. That it does so is proved by the fact that modern race meetings sometimes produce laps of 210 m.p.h.—still on only 85 h.p.!

Today, there may be little more to learn from these midgets, and the rule stating that empty weight must be above 500 lb. was dropped in 1958. The men who design, build and fly these aircraft do it for love of the sport, and they are doing a good job in building up interest in sporting aviation, especially among youngsters. Altogether, 95 different midgets have been registered through the years, of which sixteen are still active racers. Even their names sound exciting and interesting, examples being *Shoestring, PFTTT, Screaming Meany, Belle of Bethany, Lil' Spook and Tater Chip.*

This year, the National Championships are again being held in Fort Wayne, on July 3 and 4, and will be followed by a race meeting at Cleveland in September. A typical programme begins on a Saturday with qualification flights to ensure that new or modified aircraft will *(Continued on page 316)*

The American built Lazor-Rautenstrach monoplane "Belle of Bethany". Photograph by A. L. King, Jnr., Atlanta 6, U.S.A.



Railway Notes

By R. A. H. Weight

L.M.R. Express Running Miscellany

DETAILS of some London Midland journeys recently recorded form the bulk of our running notes this month.

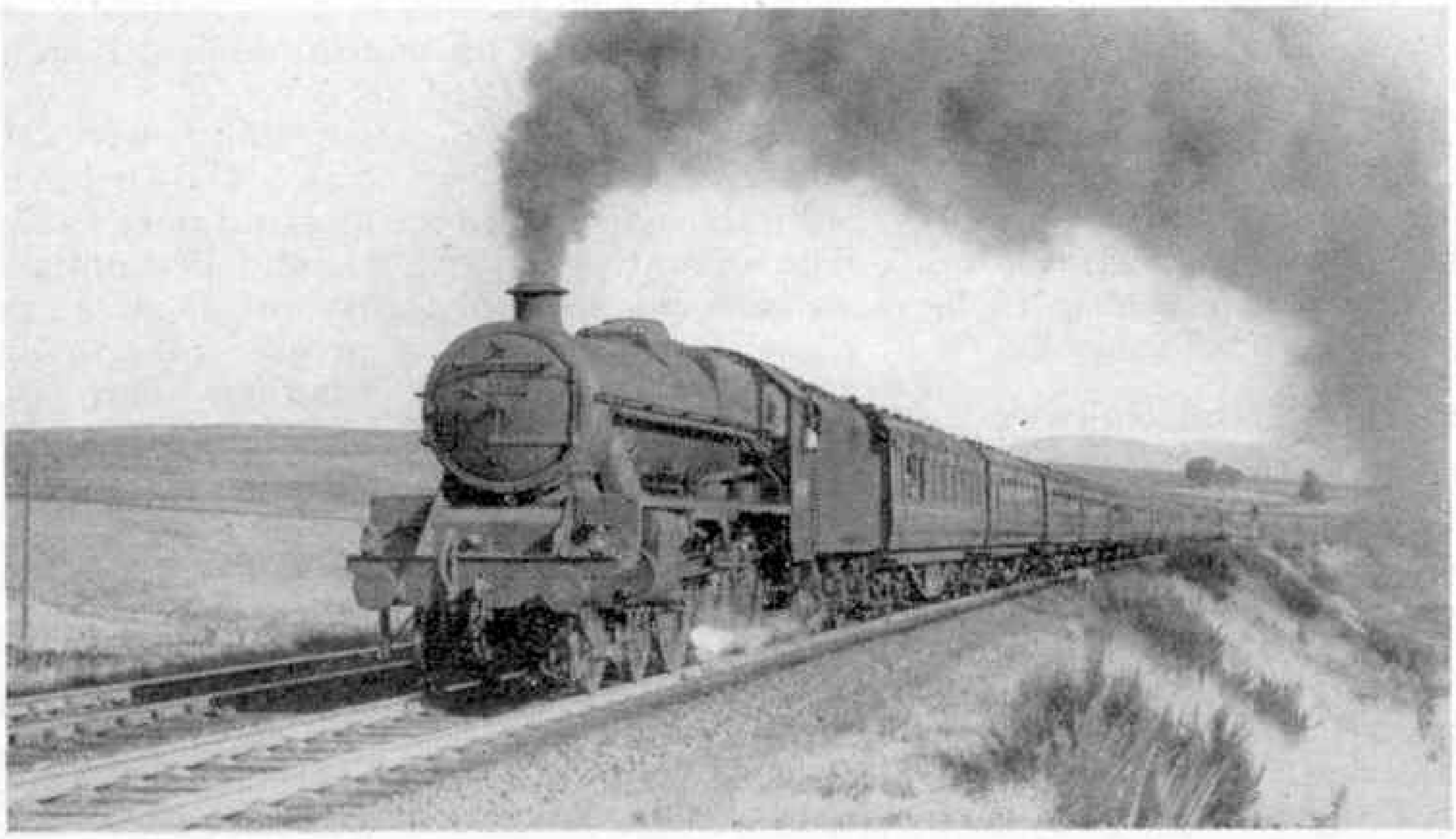
Royal Scot 7P 3-cylinder 4–6–0s were the engines concerned in the first group of journeys. Behind the actual *Royal Scot*, No. 46100, with "10-on", about 360 tons, I made my last steam express run from Birmingham to Euston before the withdrawal of the fast expresses on account of reconstructions now in hand preparatory to electrification.

Soon after restarting from Coventry there was a severe slowing for permanent-way work. We were given a clear road at Rugby No. 7 junction across to the main up West Coast track, a down Britannia-hauled Manchester express that had called at the station being held at the signals to await our passage.

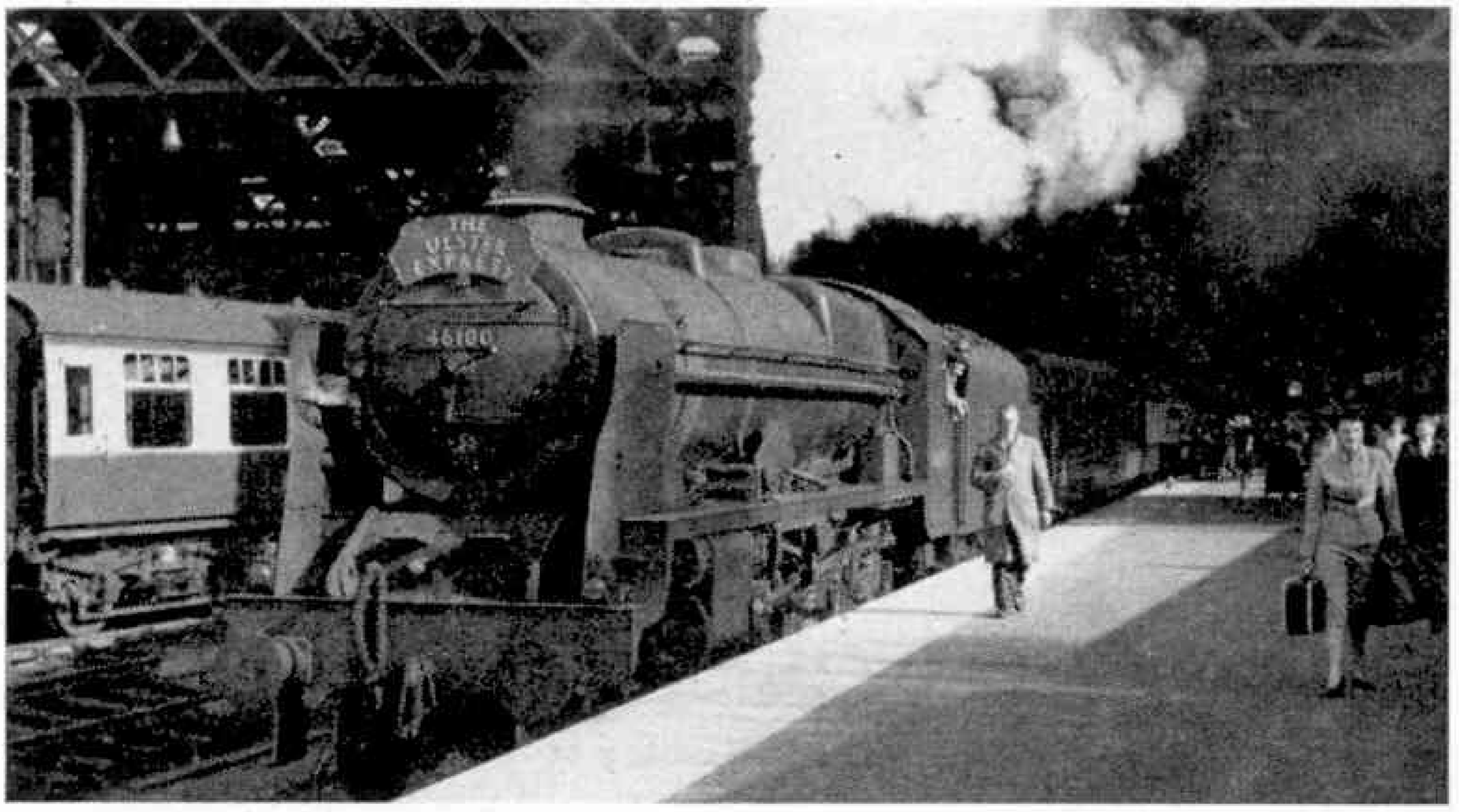
We continued at about normal speeds ranging from 56 to 75 m.p.h. to Leighton Buzzard, where a dead slowing for signals preceded a long repair slack, and so, at Tring we were 9 minutes late. The slight descents into the London area produced maxima of 83½ and 79 m.p.h. and about 3 minutes were regained, so it was equivalent to a 60 m.p.h. unchecked run up from Coventry, 94 miles. Schedule was 96 minutes.

On two titled summer trains last year, the 11.15 a.m. *Welshman* from Euston to Chester and beyond, and the *Manxman* (connecting with the Isle of Man steamer) from Liverpool to London, locomotives were appropriately Nos. 46118, *Royal Welsh Fusilier*, and 46132, *The King's Regiment, Liverpool.* The *Welshman*, northbound, carried through portions for Portmadoc and Pwllheli, a main restaurant car section for Bangor and the last three coaches, detached at Chester, for Rhyl, Colwyn Bay, and Llandudno: "12-on" say 420 tons gross. North of Rugby, with a margin allowed, there was lively running and Crewe was reached well before time. Before we left there and branched off westward past the great Locomotive Works, another Scot on the 11.35 Manchester express from Euston, calling at Stafford, also ran in early.

I found the 2.0 *Manxman* to be a full, 13-coach, 450-ton train; booked to call only at Rugby. A lengthy slowing was enforced because of engineering work near Runcorn where the line, in the course of a long, uphill stretch, curves round and crosses the



Jubilee 4-6-0 No. 45710 "Irresistible" makes a spirited ascent of Shap with a heavy train. Photograph by C. Ord.



L.M.R. No. 46100 "Royal Scot", referred to in the accompanying notes, about to leave Euston on "The Ulster Express". Photograph by S. Creer.

Mersey, the Manchester Ship Canal and a deep valley, by bridge and viaduct. After joining the main Anglo-Scottish route north of Crewe there were two other similar slacks as well as signal checks near Euston. A Manchester express was closely in front at a busy time.

No. 46148, *The Manchester Regiment*, with Driver A. Bassett of Camden Depot in charge, gave a grand run to Rugby on the 13-coach 1.25 p.m. express, Euston to Blackpool and Perth. The 82½-miles start to stop were covered within the 89 minutes then allowed, in spite of track renewals near Wolverton necessitating reduction of speed from 80 to 20 m.p.h., and also a braking almost as severe caused by adverse signals approaching Rugby, when 80 miles had been covered in 83 minutes.

Type 4 diesel-electric locomotives on long-distance trains from the north gained considerably on schedules allowing for some delay on account of electrification work. No. D211 (Driver A. Young of Camden) with a 14-coach load, after traffic delays before reaching Crewe, made up 15 minutes during the 75½-mile journey from that point to the next stop at Rugby, taking only 81 minutes overall, including three extra slows, with a maximum of 84 m.p.h. near Lichfield and rapid recovery from the slacks.

Along the former Midland Railway

No. D233, hauling 13 vehicles including big vans, also had lost time to recover after making a last call at Bletchley. With a clear road and steady running up, then down, the gradual gradients each side of Tring, at 67–72 m.p.h., the 46¾ miles into Euston were easily completed in 47 minutes.

Down the more severely-graded Midland main line from St. Pancras, early this year *Royal Scot*, after a change of shed, took the 9-coach *Waverley* to Nottingham in nasty weather in 125 minutes for 123½ miles without exceeding 80–83 m.p.h., although losing over 4 minutes by repair slowings. I know of another run by an engine of the same class that reached Nottingham, with one extra slack, in no more than 1 minute over 2 hours, or 3 minutes early.

With the fastest booking of 99 minutes for the 99 miles to Leicester, the 2.25 p.m., the quickest London–Manchester service by this route, was hauled by 6P Jubilee 4–6–0 No. 45642 *Hawke*, with the same 9-coach load. It took longer to cover the first 30 sharply undulating miles to Luton, including a long speed restriction, but 85–90–89 m.p.h. was sustained downhill thereafter, cut short, unfortunately, by a slowing for drainage work just before Bedford. Adverse signals nearly pulled us up outside Kettering and there was another repair slack, so the mile-a-minute timing to Leicester was not quite attainable although engine and crew tried hard.

The Jubilees do wonderfully well at times. They and the class 5 4–6–0s have been the mainstay of the Midland since 1937. The advent of larger Scots and Britannias, as well, in all probability, of Peak class diesels, will provide a greater margin of power. Present-day running south of Nottingham or Derby is often exciting. Better running in general will, of course, accrue from the considerable bridge and track renovations, extensions, etc., lately in hand on various lines necessitating temporary speed restrictions and safety precautions.

Messrs. D. S. M. Barrie, B. C. Bending and N. Harvey recorded some of the journeys mentioned.

The Wonders of Margam Marshalling Yard

Several remarkably modern freight marshalling yards that revolutionise sorting and forming of freight trains have been mentioned in these notes during recent years. The latest to be completed, the first of its kind in Wales and on the Western Region, at Margam, near Port Talbot, Glam., is adjacent to a vast steel works and near the important Swansea–Neath industrial and shipping area. It is said to be the most wholly automatic in Britain. It is huge, too, covering 170 acres, comprises 33 miles of running line and sidings, has radio-telephone communication between shunting engines and control staff, loud-speakers, automatic telephone exchange, electrical installations for power, lighting, heating, air compressors and so on. Additional tracks and bridges have been constructed in the neighbourhood.

Operating wonders include two sets of retarders to check the speed of wagons as they descend from the "hump", the requisite amount of braking being worked out almost instantaneously by a computer; the points leading into numerous different sidings are automatically set, by a coded tape on a teletype machine into which details of the vehicles' destinations have been fed soon after arrival in the reception section. This is mechanised power operation indeed; quicker, safer and quieter than in old-style yards, and hundreds of wagons can be dealt with in a short time.

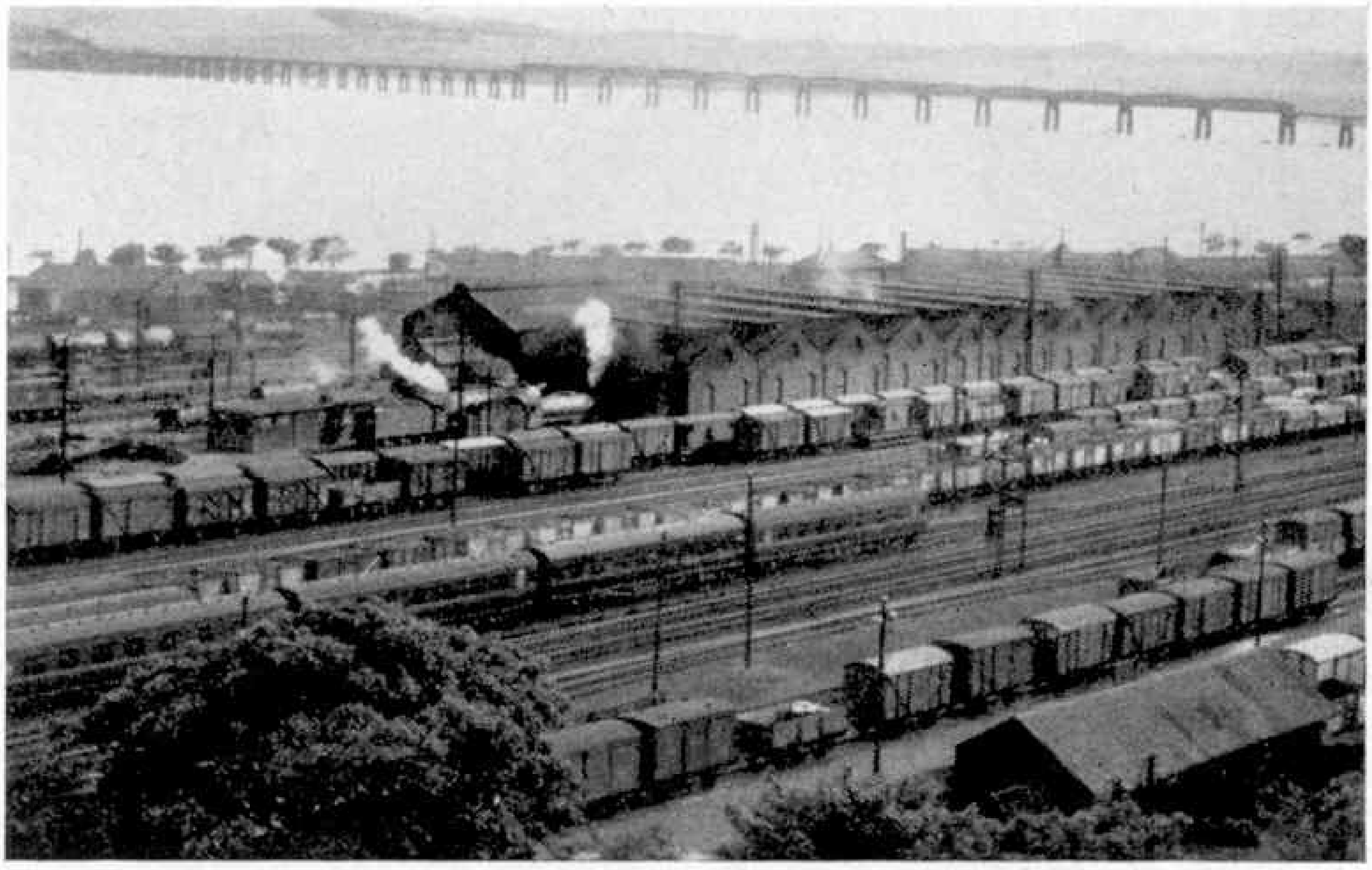
"A.W.S.", Another Valuable Safety Asset

Known formerly as "A.T.C." or automatic train control—as operated on all principal W.R. routes and locomotives or driving units—a modified and more comprehensive automatic warning system, known as "A.W.S.", is now in use. After many trials and experiments, this has been installed along considerable sections of the main lines from King's Cross and Euston, and at 71 distant, or warning, signals between Salisbury and Exeter as part of an extensive S.R. scheme now in hand. Other routes are under consideration or already approved.

This system is effective with various types of traction by means of magnets and electric contacts between the rails and in the driving cabs. Drivers receive visual and audible indication as to whether the distant signals are clear or not. If action is not taken promptly at any such signals giving the "caution" indication, the mechanism provides for prompt and automatic application of the brakes.

Speedometers for Steam Locomotives

Speedometers or cab indicators had never been a regular fitting on many types of express or mixed traffic engines until about 1952. Now the range of classes so equipped is to be wider, to aid drivers in working quicker services at close headways and observing speeds laid down.



View across the railway sidings, yards and motive power depot at Dundee, with the River Tay and Tay Bridge in the background. Photograph by K. Adams.

UNSOLVED MYSTERIES OF THE SEA

● The duty pilot . . . was stupefied to find he was on an empty ship. The ship's papers, like the crew, had vanished. . . .

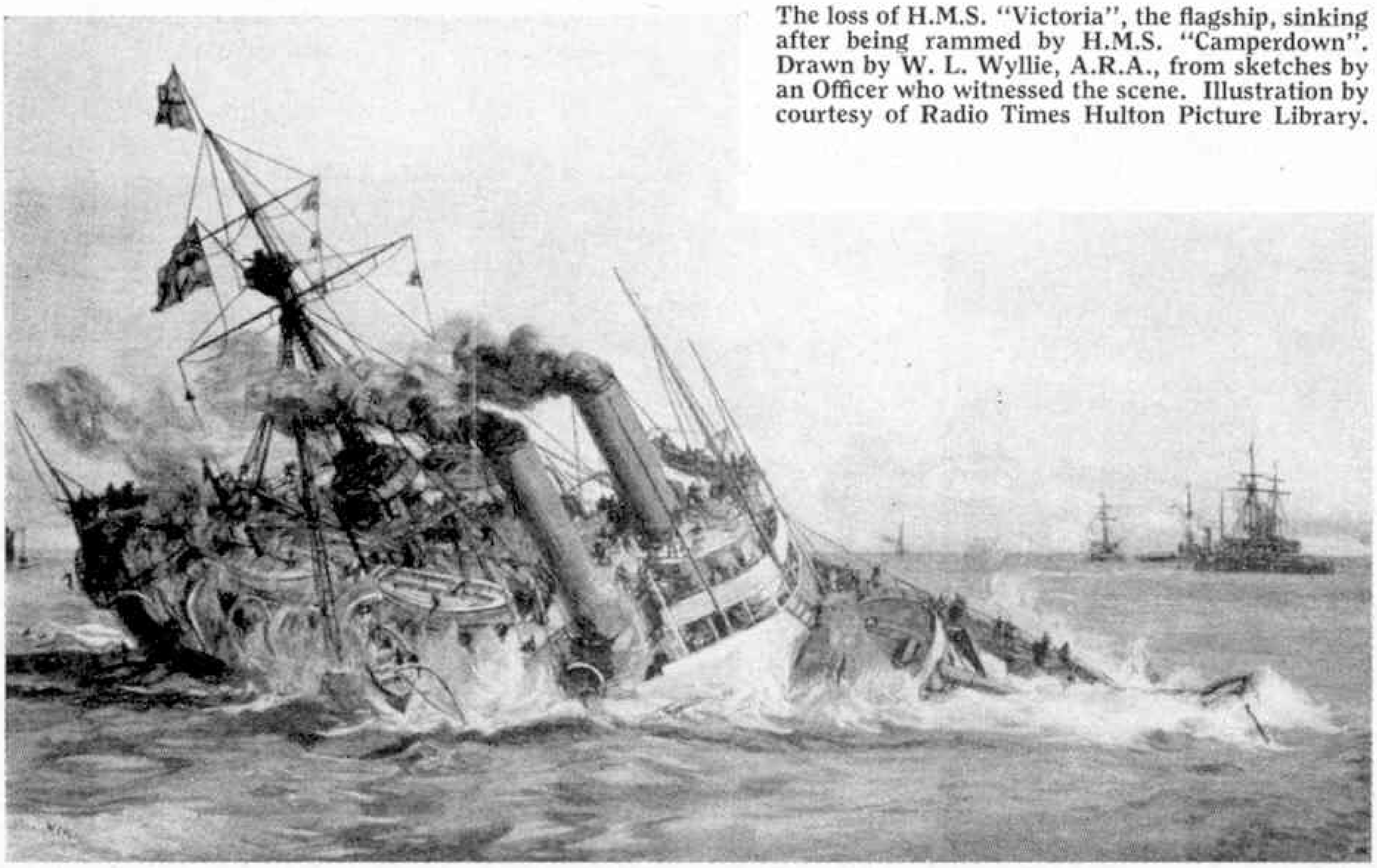
By
DAVID GUNSTON

VAST, relentless, primeval, the sea has always given rise to many mysteries, some of which defy explanation even in this rational age. Everyone knows the classic tales of the *Marie Celeste*, the *Flying Dutchman*, and the like, but there are other incidents of the sea to rival them in oddity and fascination.

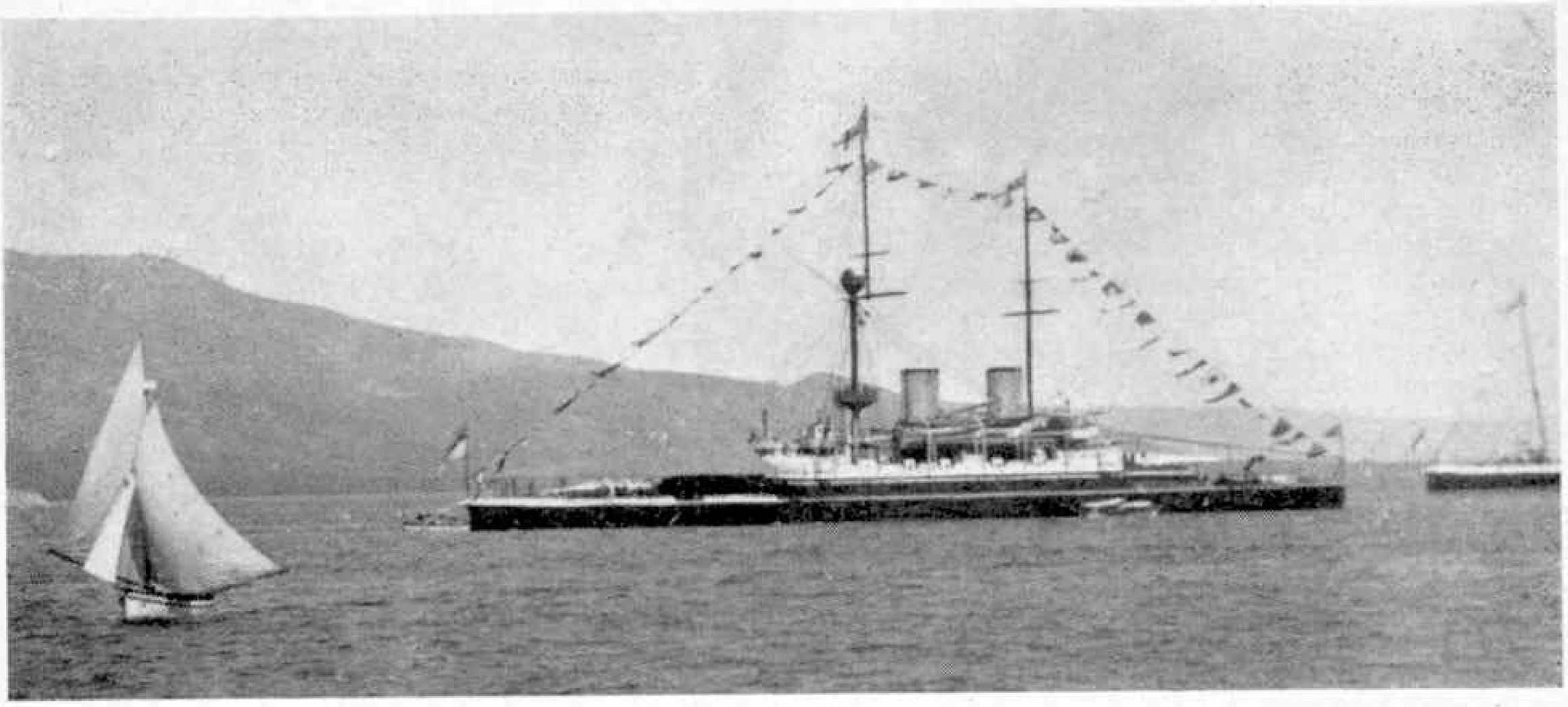
Take the case of the big three-master, the *Marlborough*. She left Lyttelton, New Zealand, in January 1890 with a good solid crew, a first-rate skipper and a cargo of sheep. There were, too, several passengers, one of whom was a woman. The *Marlborough* never reached her home port of Glasgow and was, in fact, last seen off the tip of South America. A special inquiry set up in 1891 failed to establish the cause of her sudden disappearance, and she was written off as lost with all hands.

Such a happening is not rare in maritime history, and still occurs occasionally even today. But the inquiry's verdict was wrong, for the *Marlborough* was found. She turned up again more than 23 years later.

In October 1913, she was sighted by another sailing ship off Tierra del Fuego. When she did not return a signal and appeared to be in distress, with canvas damaged and missing, the captain of the vessel which found her put off in a boat with some of his men to investigate. The derelict lay practically upright in a sheltered position, but her sails, superstructure, hull, everything was green with mildew. Rigging was rotted, the boats almost disintegrated, the decking soft to the tread. Yet her name on the stern was still clearly legible.



The loss of H.M.S. "Victoria", the flagship, sinking after being rammed by H.M.S. "Camperdown". Drawn by W. L. Wyllie, A.R.A., from sketches by an Officer who witnessed the scene. Illustration by courtesy of Radio Times Hulton Picture Library.



H.M.S. "Camperdown". Nautical Photo Agency.

Crew's grim fate

Skeletons, clad in mouldy rags, were everywhere—on the deck, in the hold, the wardroom, the cabin. One lay close to the crumbling wheel. All on board had evidently met their death suddenly and unexpectedly, but how? Even more puzzling was how the vessel had survived the merciless seas of the "Roaring Forties", out of control yet still seaworthy, for nearly 24 years. The secret was never discovered. The *Marlborough's* log had rotted beyond recognition and her papers were missing. Her grim fate remains a profound mystery.

Off the east coast of America, early in 1907, there had been reported a drifting derelict, believed to be the U.S. schooner *Everest Webster*. Several vessels had reported seeing her, and a coastguard cutter actually set out to send the hulk to the bottom, but was unable to find her.

Forced door open

Her existence as a derelict had been known for about a month when the four-master *Quevilly* came suddenly upon the wreck and decided to investigate, solely out of curiosity, as her skipper could neither take her in tow nor sink her.

After much difficulty the *Quevilly's* boarding party forced open the waterlogged door of the after-cabin, hoping, perhaps, to find the log and with it some clue as to why the ship had been abandoned. They were confronted with a group of gaunt, ashen-faced shadows of men with tangled beards, and fixed, unseeing eyes. All stirred feebly in their bunks, trying to get up and speak, but without avail. Nearly dead from starvation, cold and damp, they could not speak intelligibly, nor could they afterwards offer one single word of explanation as to why the *Everest Webster* came to be wrecked or why they made no bid to secure aid or to escape, but simply lay on their bunks waiting for the end.

Even more inexplicable was the fate of the little collier *Eltham*, off the Cornish coast in 1929. Well known in those waters, with a capable master and a crew of proven worth, she left South Wales with a cargo of coal. A few days later she was found, not too seriously damaged, stranded on some treacherous rocks two cable lengths from shore. Her wheel and steering gear were in good order, her spars sound, her boats intact, her anchors stowed normally. Only her skipper and crew had vanished, and with them her papers.

The weather at the time was calm and the winds were light. There was, in fact, no apparent reason for the mishap. No distress signals or cries for help were noticed by the nearby coastguard station on the night she was wrecked. No bodies were ever washed ashore; no survivors or clues were ever reported.

Another baffling enigma occurred many years ago within the harbour of Queenstown, Ireland, where one November night the duty pilot was surprised to see a bedraggled-looking three-master slowly approaching the port through the thick fog.

Valuable Cargo

He set out to board her, received no welcoming shout, found no ladder lowered over her side for him, and, after getting aboard was stupefied to find he was on an empty ship. Everything was in order, including the cargo of mahogany blocks which was of considerable value. The ship's papers, like her crew, had vanished, but

there was no evidence of mutiny, sickness or anything untoward. Strangest of all, the vessel carried no name.

She was towed into the harbour and subsequently minutely examined. No clues to the mystery were discovered, and no owners or consignees ever came forward to claim her. She was never identified and, after some years, was sold by auction and broken up.

Cases of unexplained desertion of an apparently perfectly sound ship at sea always call to mind the unsolved case of *Marie Celeste*. Yet there are at least half a dozen other instances of almost identical happenings on record.

One was that of the cargo steamer *Zebrine*, a French vessel well known in the English Channel. In 1917 she was found, recently abandoned, off Cherbourg. The table was laid in the mess-room, washing was drying on a deck-line, the log had been correctly written up to the day before.

Yielded no trace

Admittedly, this happened in war-time, when reasons for abandoning a ship are easier to find, and it was presumed her crew had been taken prisoner by a U-boat which, oddly enough, had not sunk the *Zebrine*. But after the war German prison camps yielded no trace of the *Zebrine's* crew and U-boat records failed to offer clues to the mystery.

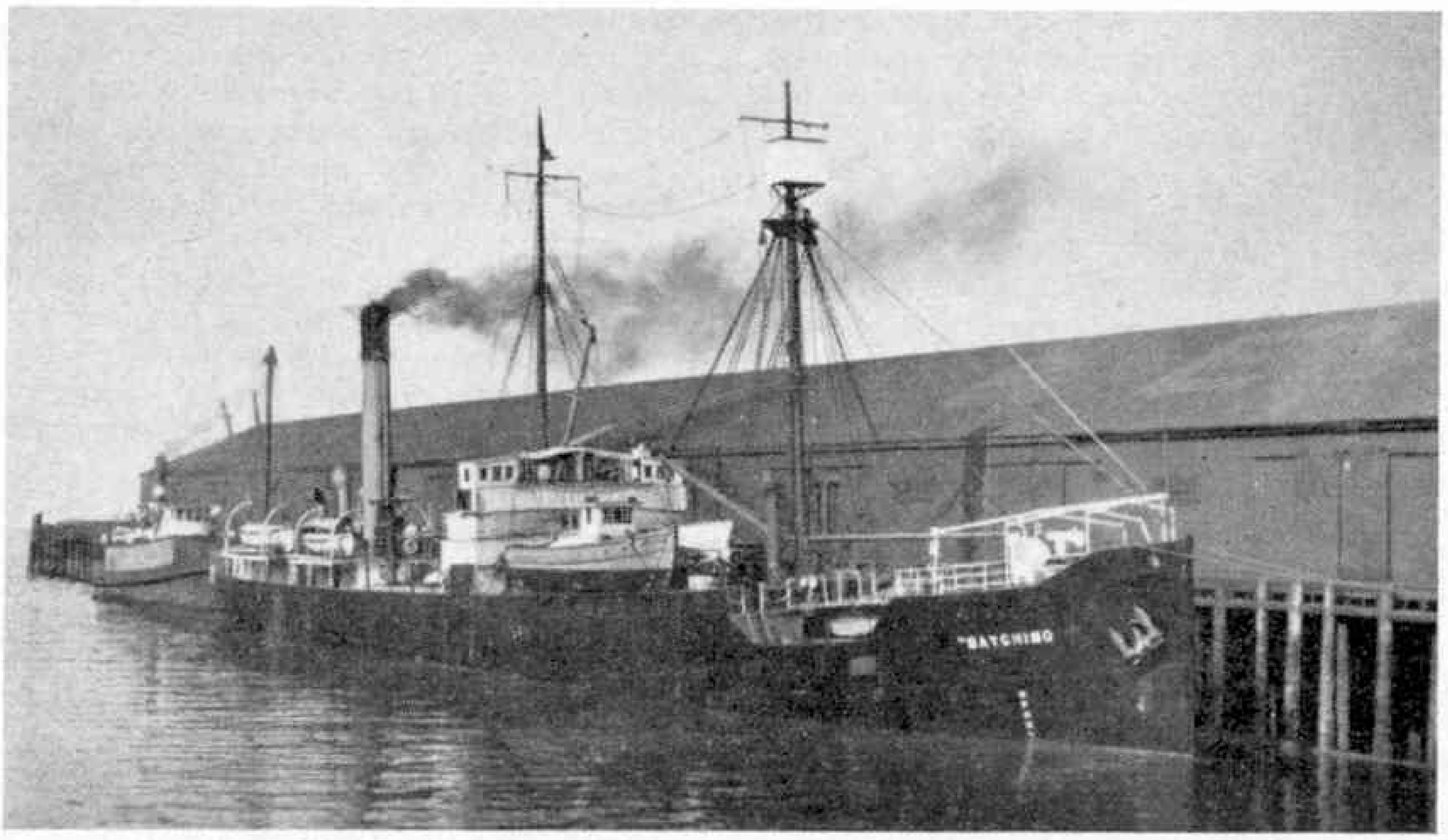
Odder still was the case of the *P.E.C.C.*, a mythical ship known only by her index initials. On February 22, 1939, several months before the outbreak of World War II, a number of ships in the Atlantic picked up distress signals from a vessel claiming to be the *P.E.C.C.* She said she had been torpedoed about 350 miles south of the Azores. The U.S. liner *Tulsa*, the British liner *Empress of Australia*, the Greek merchantman *Mont Pelion* and a number of other ships all heard the S.O.S., and those nearest left their course to give aid.

Yet, no ship or wreckage was ever discovered, there were no boats, lifebelts, floating oil or any trace whatever of a sunken ship.

France, Britain, America and Germany all denied the presence of any of their submarines in the area concerned, and then Lloyds of London dropped a bombshell by saying that the initials *P.E.C.C.* referred to the Dutch liner *Flandria*, reported lost with all hands some years before.

No insurance companies ever reported the disappearance of any vessel in that area, yet radio operators on ten different ships heard the S.O.S. messages independently. It was proved that the signals emanated from a position at sea, and could not have been sent by a hoaxer on land. Yet for a ship's operator to send an S.O.S. as a hoax in such circumstances seems unthinkable. The *P.E.C.C.* case clearly belongs to the world's fleet of mysteries.

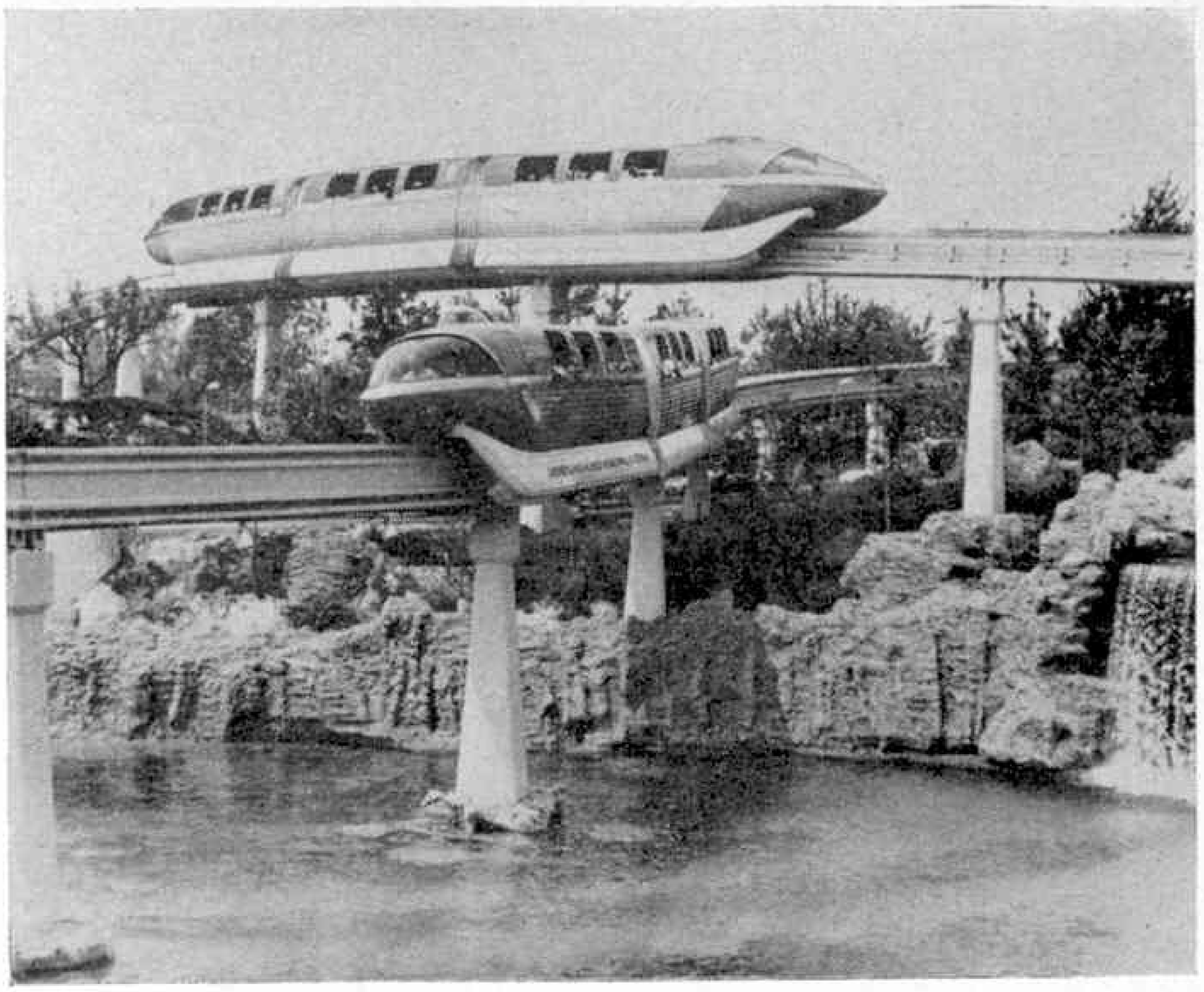
Brought back into the news recently has been the strange story of the dreadnought *Victoria*, flagship of the British Mediterranean Fleet in 1893. In command was a noted sailor, Admiral Sir George Tryon, and on June 22 while carrying out manœuvres off the North African Coast, he arranged his fleet into *(Continued on page 318)*



The "Baychimo" moored at a quay. Nautical Photo Agency.

Are These The Buses of Tomorrow?

By R. J. SALTER



ANYONE who has ever travelled by bus or car through a big city in the rush hour will agree that, before long, some new way of getting about must be found.

The trouble with buses and other kinds of automobiles is that they must run through a maze of city streets and traffic lights. To build new roads in a busy city means that large buildings have to be demolished, and this can be a very expensive business.

Underground railways, on the other hand, can run whatever conditions are like on the surface, but, again, building extensions to underground systems can be a slow and costly job.

What may well be the solution to the problem is the monorail overhead train. It is not new—short trial lengths have been built—but the first monorail service to be operated every day has been built in the "land of tomorrow", at Disneyland, California.

There, two ultra-modern trains, each able to carry 82 passengers, run by electric power on a one-mile-long "highway in the sky".

The highway is made from concrete beams which rest on concrete columns. Trains run on pneumatic tyres and driving power is provided by two 55 h.p. electric motors in each train.

Fashioned to look as streamlined as possible, the trains are built in the same way as an aeroplane, using aluminium and stainless steel with an interior of plastic and fibre-glass.

If such trains were used to move people about cities, speeds of up to 80 miles an hour would be possible. As the monorail system at Disneyland curves and dips in much the same manner as a switchback, the top speed has been fixed at 20 m.p.h.

Signalling, of course, has to be as perfect as possible, and the system used makes collisions impossible. Lights on the driver's dashboard go on to show "Safe," "Caution" and "Stop". If the driver goes past a stop signal the brakes are applied automatically.

High-speed escalators

To feed the electricity into the motors on the trains two steel and copper bars are placed along one side of the beam on which the train runs. Connections from the train then pick up the current; this obviates the need for an overhead cable system.

Passengers for the train do not have to use steps either to enter or leave the coaches. Instead, high-speed escalators, travelling at 125 feet a minute, carry passengers to the train door.

As the monorail travels along in Disneyland it crosses the submarine lagoon, winds around the "Matterhorn Mountain" and over the super-autopia highways, then parallel to the track of three 1890 locomotives. This provides a striking contrast between the locomotives of yesterday and the machines which, one day, may replace buses in our cities.

EVENING STAR

YOU all know that the British Railways' modernisation plan, first announced in 1955, and now making good progress, involves the gradual replacement of steam locomotives by diesel and electric motive power. No further steam locomotives were to be built after existing construction programmes had been completed and so, one by one, the locomotive building centres of British Railways have built their last steam engine.

LESLIE C. NORMAN tells the story of the recently-completed last steam locomotive for British Railways.

The very last of these locomotives to be completed was turned out at Swindon Works in March and, in view of the importance of the occasion, a special ceremony was arranged to usher the engine into service.

The engine is No. 92220, a 2-10-0 of the B.R. Standard class 9 but unlike its numerous heavy freight sister engines it bears a name, *Evening Star*. The christening of the engine by the unveiling of one of the nameplates formed the central feature of the Swindon ceremony.

Evening Star is a specially appropriate name in view of the fact that the steam engine is considered to be reaching the evening of its very long period of faithful railway service.

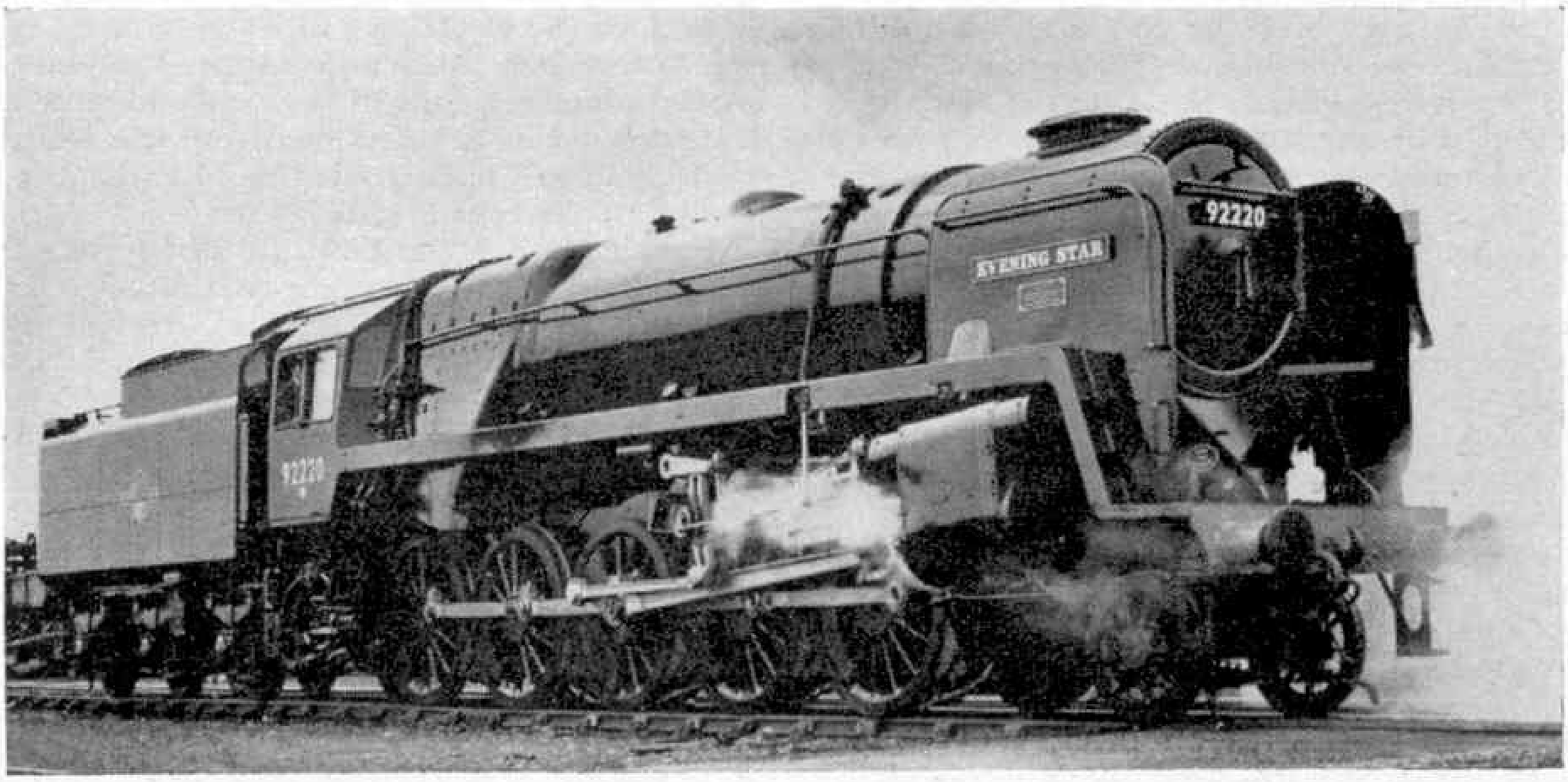
The name was suggested by three members of the railway staff in a competition organised by the Western Region Staff Magazine. Again, the name is famous in the annals of Swindon as one of the early broad gauge locomotives of the former Great Western Railway, built in 1839, also was called *Evening Star*.

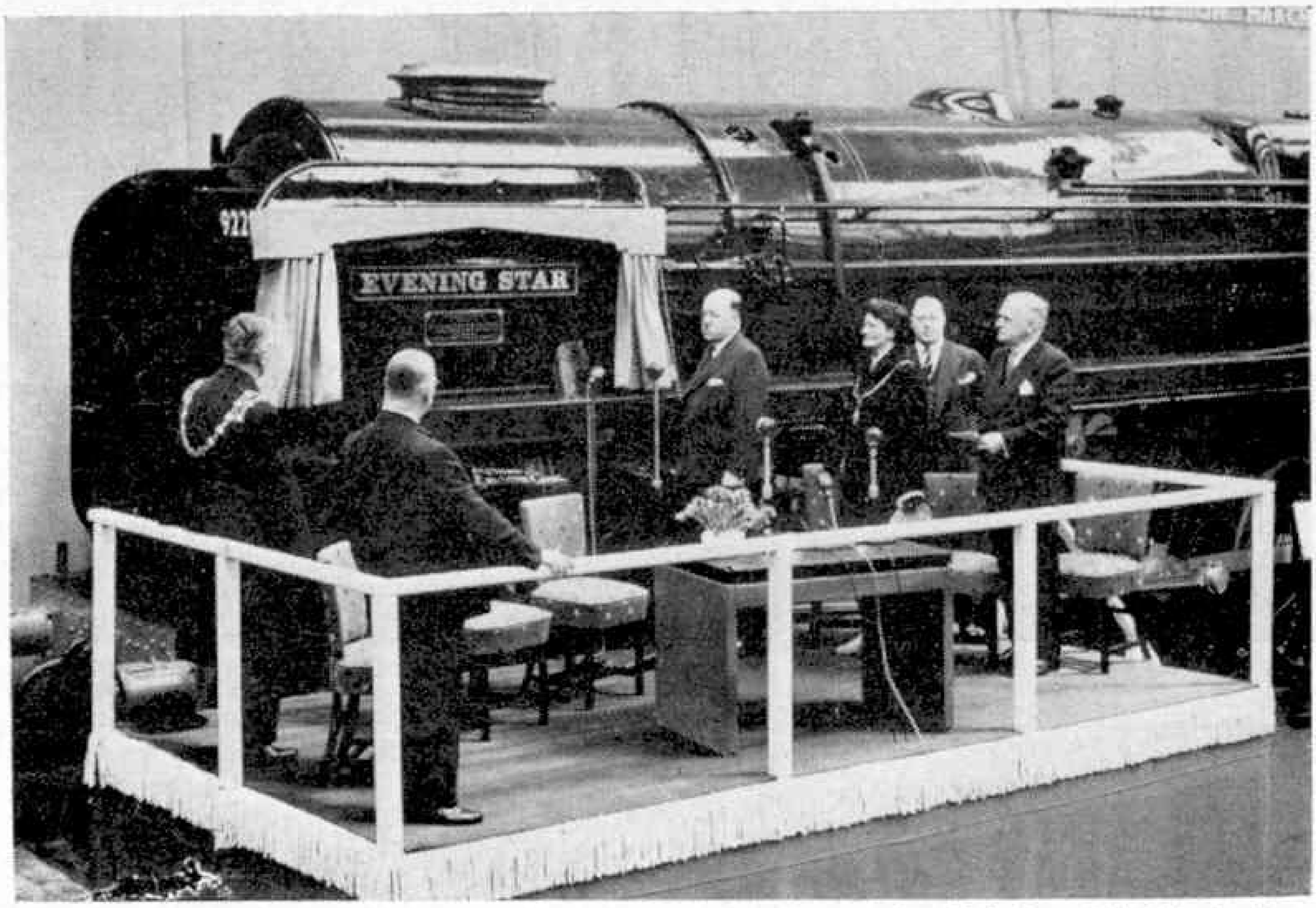
In more recent times another *Evening Star*, No. 4002, built in 1907, was a member of the earliest series of brilliant four-cylinder 4-6-0s classed generally as "Stars" that was developed during the Churchward period, and which led directly to the Castles and the Kings so familiar to-day.

Individuality Apparent

Unlike these traditional types the present *Evening Star* is a powerful two-cylinder engine, with outside valve motion, and bears little apparent resemblance to the standard Swindon products. But it has a high working pressure, a boiler with a partly-tapered barrel, and large long-lap piston valves, all features that owe their origin to G.W.R. practice.

In various small ways, too, the individ-





"Evening Star", the last steam locomotive built for B.R. is named at Swindon. The illustrations and many of the details in this article are by courtesy of British Railways, Western Region.

uality of Swindon practice is apparent as the style of lettering used on the nameplate is that employed for so many engines of G.W.R. design and, in finishing the engine in green, with lining, the W.R. locomotive people have followed their practice of using this livery for many classes of locomotives other than the more important express types, such as is the rule elsewhere.

Finally, the squat double chimney of *Evening Star* is distinguished by the copper finish of its cap, a feature so well known in connection with W.R. practice. And, of course, it is fitted with the W.R. pattern of Automatic Train Control apparatus.

Commemorative Plates

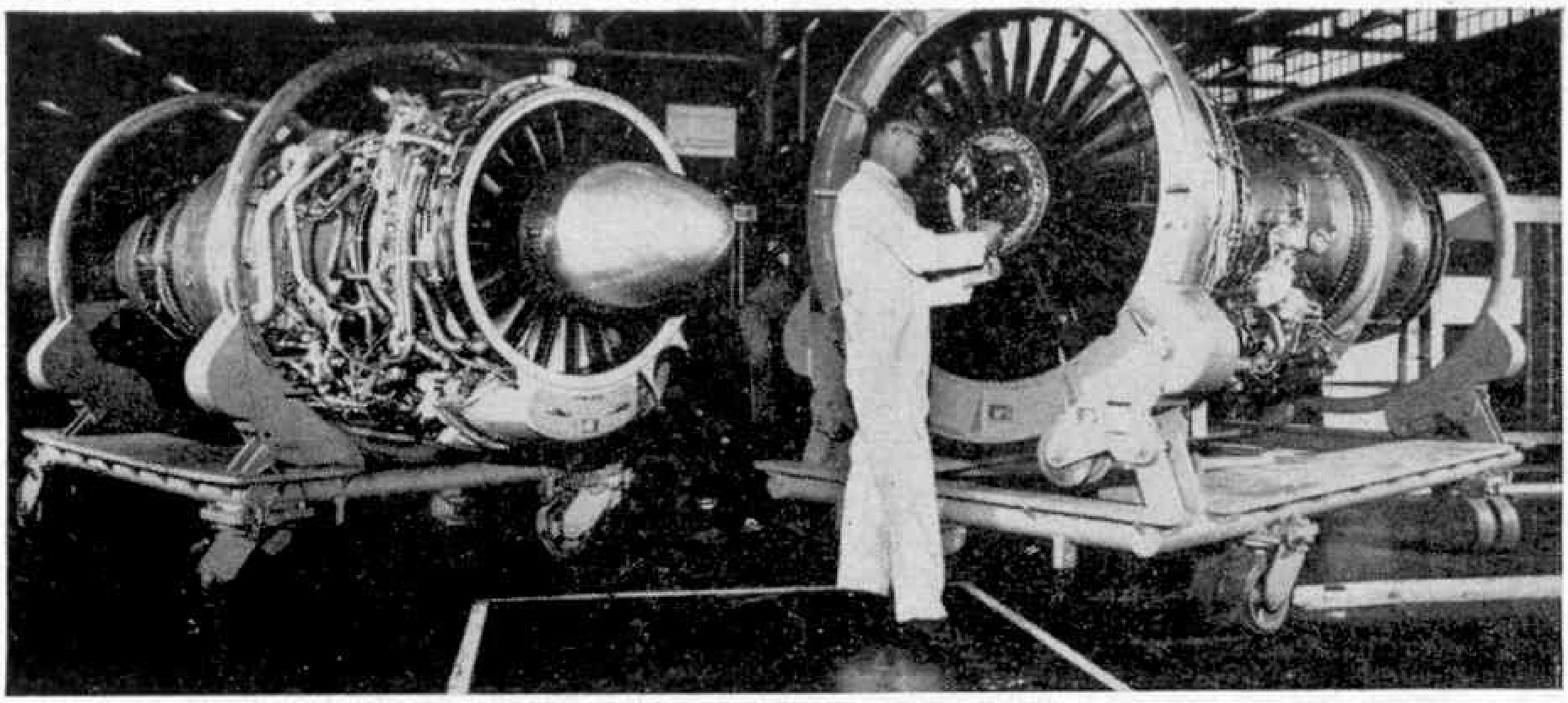
In addition to the nameplates, which are carried on the smoke deflectors at the sides of the smoke-box, there are commemorative plates bearing the wording: *No. 92220 built at Swindon March 1960*, followed by the qualifications: *The last steam locomotive for British Railways, Named at Swindon on March 18th, 1960, by K. W. C. Grand, Esq. Member of the British Transport Commission.*

For the interest of those attending the naming ceremony the Western Region gathered together an exhibition of historical and modern locomotives and coaching vehicles. They included the famous Great Western Railway locomotive *City of Truro*, which, in 1904, was credited with reaching the amazing speed of 102·3 miles an hour, when hauling an Ocean Mails special between Plymouth and Bristol; "Castle" and "King" class locomotives; and the Swindon built 2,200 h.p. diesel-hydraulic "Warship" Class locomotives Nos. D817 "*Foxhound*", and D818 "*Glory*".

There were some coaches, too, including diesel-powered cars, Finally—and far from its own territory - Caledonian Railway locomotive No. 123, which took part in the famous East and West Coast Railway "Race to the North", in 1888, also was on view.

The class 9 2-10-0 has proved to be one of the most successful B.R. Standard designs and was introduced with driving wheels relatively large for its type, 5ft. in diameter, with a view to getting heavy freight trains along at a rather faster pace than was formerly considered normal. The use of the ten-coupled wheel arrangement ensures ample adhesion for moving heavy loads and, so far as covering the ground is concerned, some of the class have been known to reach quite high speeds even in passenger train service. They are not normally booked to such duties, although such occasions are bound to occur now and again, particularly during the busy summer season.

The naming ceremony was held as a tribute to steam power as a medium by which untold millions of miles have been run in the service of humanity and to mark the end of an era begun by Richard Trevithick, George (*Continued on page 318*)



An interesting comparison. On the right is one of the new Pratt and Whitney TF-33-3 turbofan engines and, on the left, a conventional J57-P-43W turbojet. The turbofan engine is described on this page.

Air News

British Engines Best

BY the time this issue of the *M.M.* appears, Britain's exports of aero engines since the war will top the £300 million mark. Even in the United States, eleven airlines are operating Viscounts or Friendships powered by Rolls-Royce Darts.

By

John W. R. Taylor

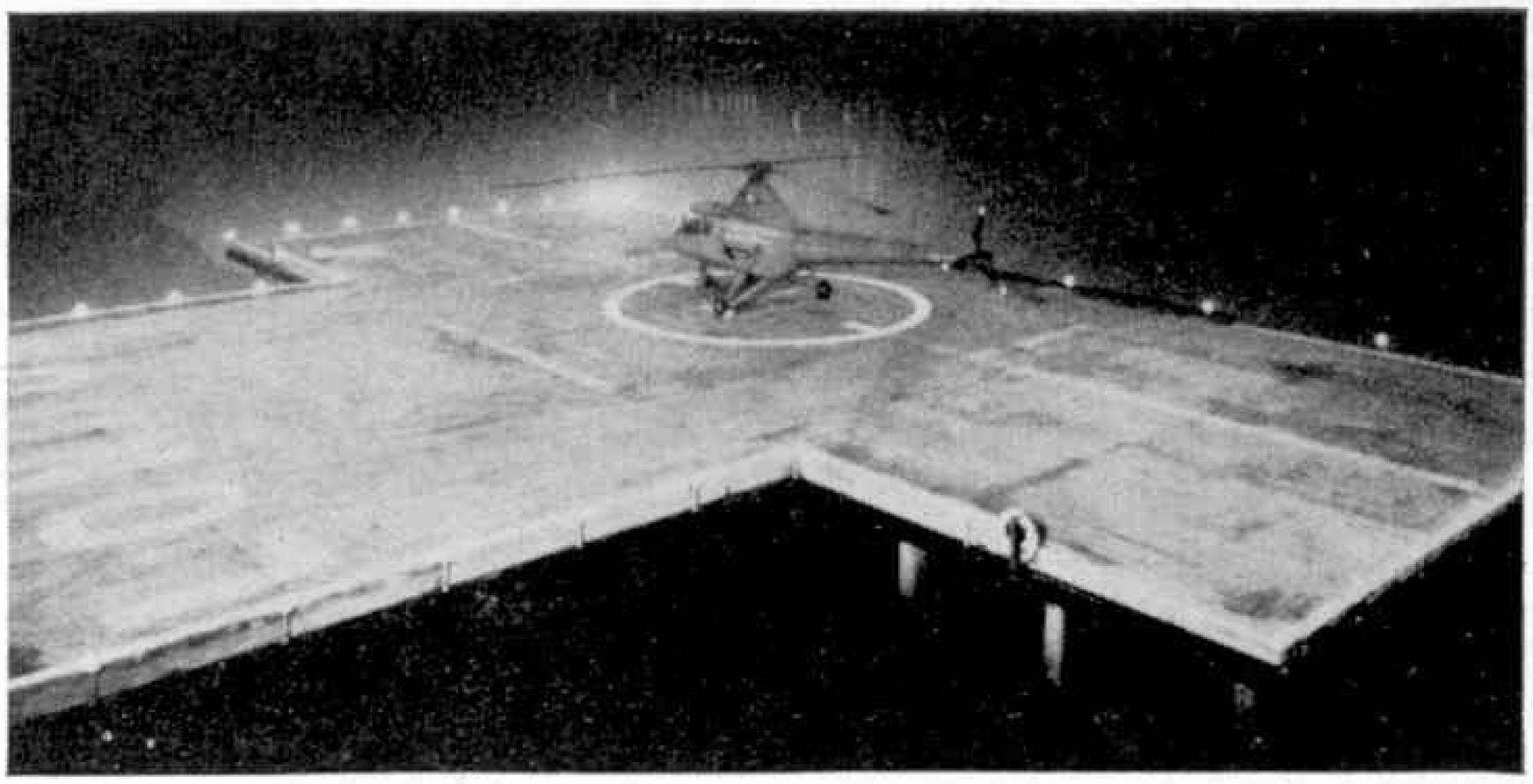
Until this year, however, no U.S. domestic airline had bought any jet aircraft with non-American engines. Now all that is changed, for the 20 French-built Caravelles ordered by United Air Lines will each be powered by two Rolls-Royce Avon 531-R turbojets. The value of the contract to Rolls-Royce is well over £3,000,000 and it is the biggest single order for British engines ever received from the United States.

Turbofan and By-pass Engines

While on the subject of engines, the illustration at the head of this page is of unusual interest because it shows one of the new Pratt & Whitney TF-33-3 turbofan engines, now being built in America, side-by-side with a conventional turbojet. As designers always try to keep the frontal area of their aircraft and engines as small as possible, to reduce drag, the greater diameter of the turbofan or by-pass engine may come as a shock to more technically-minded readers. There is, however, a good reason for it. From the point of view of effort put into the job, it is more efficient to get forward thrust by throwing back a fat column of slow-moving air, as with a propeller, than by throwing back a thin fast-moving column, as with a turbojet. The turbofan tries to get the best of both worlds.

There are several different designs, but all work in much the same way. In the case of the TF-33-3, a single large-diameter fan is mounted at the front of the engine. When the airflow passes this fan, most of it goes through the engine in the normal way, but the rest is carried between the engine nacelle and the outside of the engine. When this comparatively cool air rejoins the hot exhaust gases at the rear of the engine, it slows them down and the result is a slower, fatter and hence more efficient column of air.

The turbofan engine illustrated will power the new B-52H version of the Boeing Stratofortress bomber, giving it a much greater range than the B-52s now in service Commercial models will be used in versions of the Boeing 707 and 720 jet-liners, giving about 50 per cent. more take-off thrust and 20 per cent. greater power for cruising flight.



The G.E.C. lighting equipment at Battersea Heliport, London, for night flying operations. This view of the landing platform at night was taken from the control tower, and is reproduced by courtesy of the General Electric Co. Ltd., London.

Night Flying at Battersea Heliport

Battersea Heliport in London, which was developed by Westland Aircraft and opened for daylight operations on April 23, 1959, has been granted a licence for night flying. This follows the installation of special lighting equipment by the General Electric Company at a cost of about £1,700.

The lighting consists of medium-intensity perimeter lights, to show pilots the boundaries of the landing platform, and floodlights mounted on towers to make the platform stand out against its surroundings, particularly the river, which would otherwise appear bottomless at night. By giving texture to the concrete platform the floodlights help pilots to judge their relative height on the final approach.

Coming in from a height of between 500 and 1,000 feet over the Thames, pilots also receive assistance from an angle-of-approach indicator. This device gives a flashing signal divided into three horizontal colour zones: red if the pilot is too low, amber if he is too high, and green when he is on the correct approach path, which at Battersea is angled 12 deg. above the horizontal.

Unlike a fixed-wing aircraft, which passes over an airport's approach lights, the helicopter has to land among these lights, which become progressively brighter as the helicopter nears the ground. To prevent pilots from being dazzled, the heliport lights can be dimmed during the final stages of an approach.

Although the heliport is neither large enough nor near enough to the city centre to become a permanent terminal, it is providing valuable experience of the problems to be expected when operating helicopters in and out of a heavily built-up area. It has already attracted considerable traffic, averaging about 150 movements a month.

It's Debonair

The latest Beechcraft four-seat lightplane, shown in the bottom picture on this page, is Debonair in every way. That is its name and it is most appropriate, because if you look in the dictionary you will find that it comes from the French

Beechcraft Debonair, an American four-seat lightplane with a cruising speed of 180 m.p.h. at 11,000 ft.

The French Dassault Mirage IV, designed especially to carry France's newly-perfected atomic bomb. Illustration by courtesy of Ministère des Armées, "Air", France.

de bonne aire, meaning good-natured or gentle.

According to those who have flown it, the Debonair inherits all the good qualities of the well-known Bonanza, from which it has been developed. To bring down the cost it has a 225 h.p. Continental I0-470-J engine in place of the Bonanza's 250 h.p. I0-470-C and a conventional fin and tailplane instead of the latter's Vee tail unit. In other respects the airframes are almost identical. Loaded weight is 2,900 lb., and normal cruising speed 180 m.p.h. at 11,000 ft.

Watchin' all the Whales Go By!

Crews of R.A.F. Coastal Command Shackleton and Hastings aircraft, who carry out daily patrols around our coasts and far out over the Atlantic, have a new interest—whale watching.

The National Institute of Oceanography is making a survey of the distribution and migration of whales, especially the species from which oil is obtained. To help this work, any R.A.F. crew which spots a school of whales now tries to identify them, log their position, count them and, if possible, photograph them. Usually the whales are seen singly, but up to twelve have been sighted together off the west coast of Ireland, while on one occasion between 25 and 30 were observed basking together.

Already much valuable information has been brought back by the airmen. For example, it was always believed that whales spent the winter in tropical or sub-tropical waters and the summer in polar regions, but many sightings have been made around Britain in the summer months.

French Atom-bomber

The Dassault Mirage IV, illustrated above, is one of the most important recent products of the French aircraft industry, for it has been designed specially to carry France's newly-perfected atomic bomb. What makes it of particular interest as an aeroplane is that it was produced simply by scaling up the airframe of the already-proven Mirage III single-seat fighter and fitting two 13,225 lb. thrust Atar 9 turbo-jets with reheat, instead of the single turbojet and auxiliary rocket-motor of the III.

First flown on June 17, 1959, the Mirage IV has tandem cockpits for its crew of two and is expected to carry its bomb semi-submerged in the bottom of the rear fuselage. It will normally cruise to the target at high supersonic speeds above 40,000 feet and return at just below the speed of sound, but the attack can be delivered at ground level if required. Its advanced electronic navigation and bombing system is entirely self-contained, and it will be equipped for refuelling in flight when the target is more than 1,000 miles from its base.

During test flights, the prototype has exceeded twice the speed of sound (1,320 m.p.h. at height) and has cruised at 1·9 times the speed of sound for a period of 20 minutes. It is planned to build a pre-production series of ten, followed by 40 production Mirage IVs in 1964–65.

Hovercraft becomes Jet-propelled

In the March issue of the *M.M.* I hinted that the Saunders-Roe SR-N1 Hovercraft might, in time, have a small turbojet mounted on its rear deck for propulsion. This has now happened, and the result should be a big improvement in perform-ance. The engine fitted is an 880 lb. thrust Blackburn-Turbomeca Marboré.

Originally, the vehicle was propelled and steered entirely by diverting some of the air from the ducted fan in the centre into large pipes at each side and ejecting it from the front or rear of these.

MECCANO MAGAZINE

Junior Section

A SCHEME to speed up collection of mail has been introduced to Belfast. The Post Office authorities have replaced the ordinary type of pillar box by new ones such as that shown in this photograph by Barry Kirkwood, of Belfast. The new pillar box has two compartments, one for letters for Belfast destinations only, the other for general mail. At least 27 of these boxes have been set up in the streets of central Belfast, with eight more at Crown Post Offices.

Fourteen-year old Jimmy Gower of Corby, Northamptonshire, thinks four wheels are better than two. With the help of his father, he has made the unusual contraption photographed here. Called a car-bike, it has a motor car steering wheel mounted on an upright shaft, with chains running from the steering shaft to the front wheels. The back wheels are turned by the usual cycle pedal and chain attachment, and a car type handbrake is fitted. Jimmy, in this picture, gives a study of concentration and control.

Spanner's Special Section For Juniors

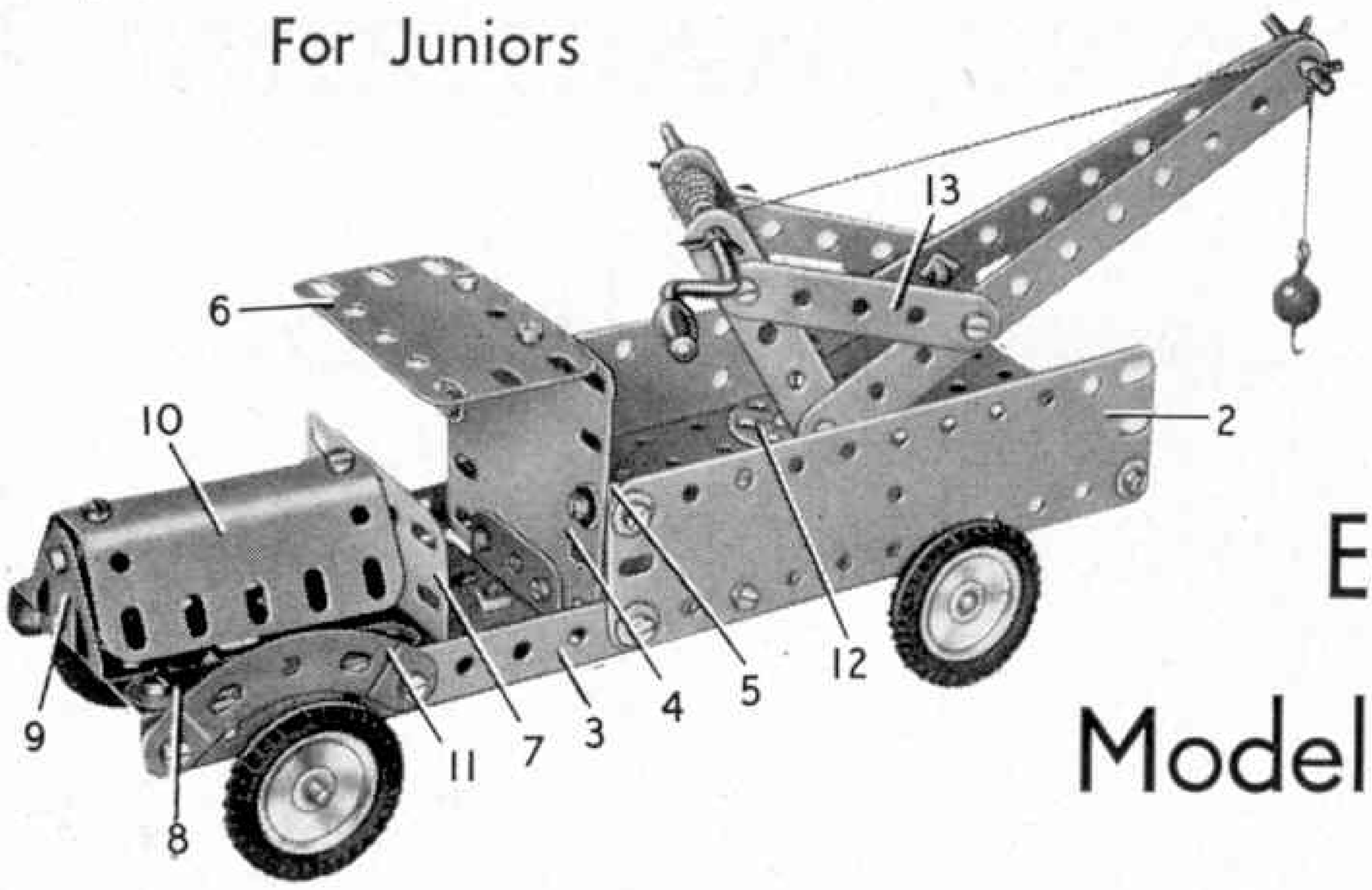


Fig. 1. A Garage Service Vehicle that can be built from parts in Outfit No. 2.

Easy Model-Building

Garage Vehicle

The Garage Service Vehicle shown in Figs. 1 and 2 can be built from parts in Outfit No. 2. A $2\frac{1}{2}'' \times 5\frac{1}{2}''$ Flanged Plate 1 forms the chassis of this model and two $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates 2 are bolted to it, the bolts at one end being used also to secure two $5\frac{1}{2}''$ Perforated Strips 3. A Trunnion and a $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate 4, forming the back of the cab, are fixed by the same bolts to the Flanged Plate, and the $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate is also attached to Angle Brackets 5 secured to the $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates. A $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate is bolted to the Trunnion and a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plate 6, forming the roof of the cab, is fixed to Angle Brackets bolted to the back. Two $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strips are bolted to the Perforated Strips, one in the end hole and the other in the fifth hole, and to the latter is bolted a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plate 7. Two $2\frac{1}{2}''$ Perforated Strips 8 and a Trunnion 9 are secured to the other Double Angle Strip, and the bonnet, which is formed from a $2\frac{1}{2}'' \times 2\frac{1}{2}''$ U-section Curved Plate 10, is bolted to Angle Brackets attached to the Trunnion and the $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate. Two Stepped Curved Strips 11 are bolted to the $5\frac{1}{2}''$ Strips to form mudguards. A Bush Wheel 12 is fixed to a 2" Axle Rod journalled in a Reversed Angle Bracket bolted underneath the Flanged Plate (see Fig. 2). A $5\frac{1}{2}''$ Strip and a $2\frac{1}{2}''$ Strip are bolted to two Angle Brackets fixed to the Bush Wheel 12 and they are braced by further $2\frac{1}{2}''$ Strips 13, as shown. A $3\frac{1}{2}''$ Crank Handle is journalled in the ends of the first-mentioned $2\frac{1}{2}''$ Strips and a length of Cord attached to an Anchoring Spring on the Crank, passes over a 2" Rod journalled in the ends of the $5\frac{1}{2}''$ Strips and a small Loaded Hook is attached to it. The front and back

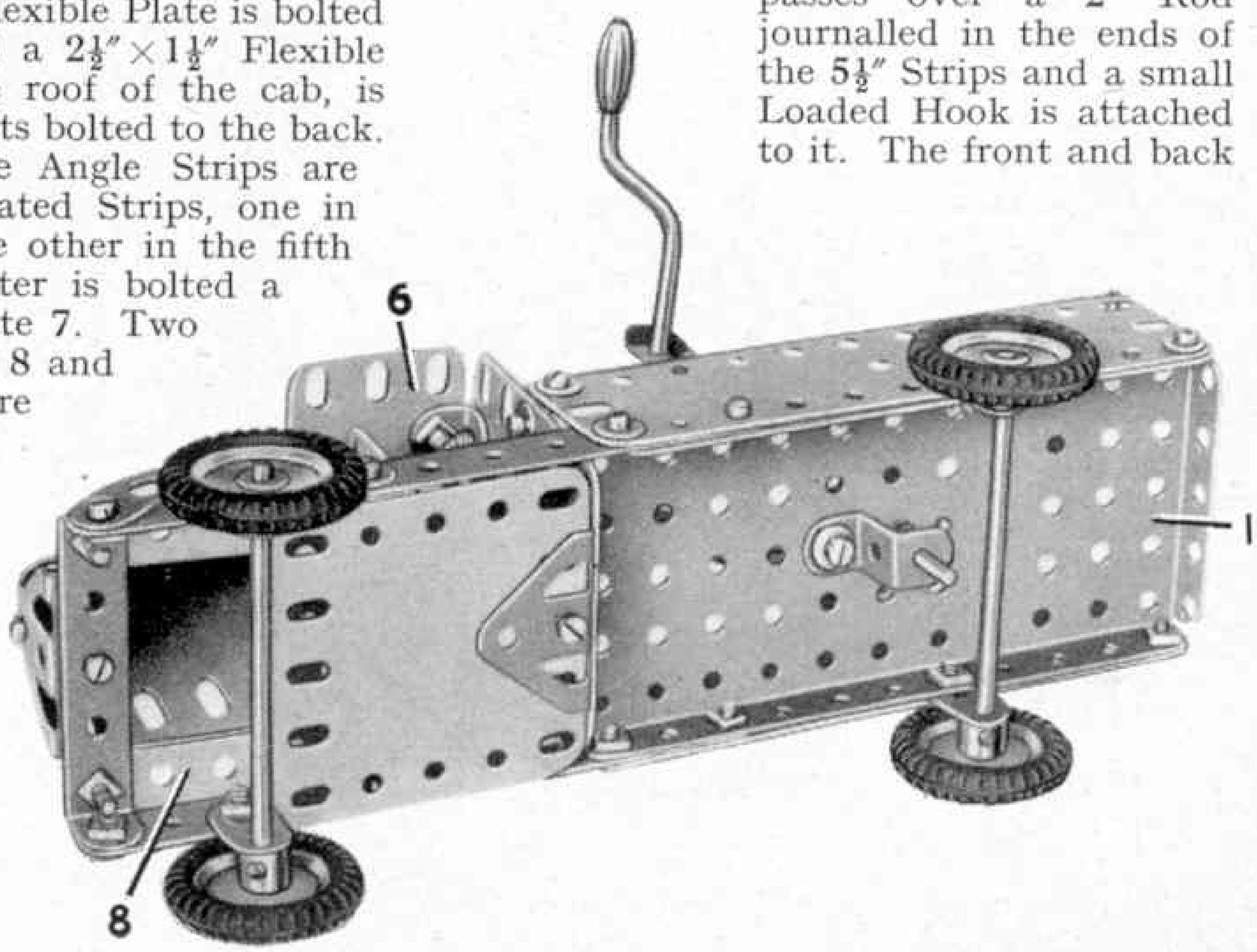


Fig. 2. An underneath view of the Garage Service Vehicle.

axles are carried in Fishplates bolted to the Flanged Plate and the 5½″ Strips of the chassis. The wheels are 1″ Pulleys fitted with 1″ Motor Tyres.

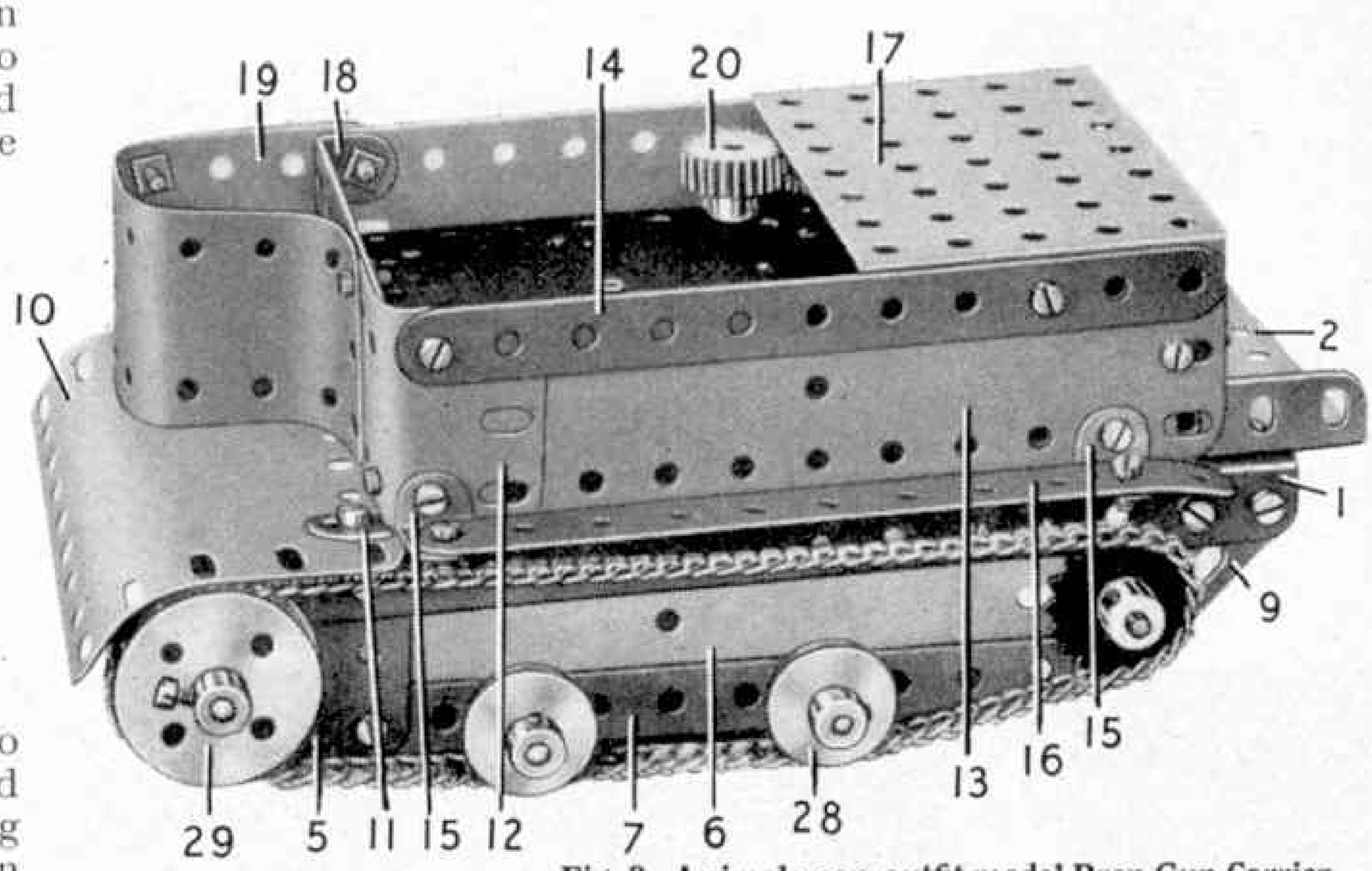


Fig. 3. A simple non-outfit model Bren Gun Carrier

Bren Gun Carrier

To assemble the Bren Gun Carrier shown in Figs. 3 and 4 first bolt two 7½″ Angle Girders 1 to a 3½″×2½″ Flanged Plate 2, overlapping four holes, and then attach two 3½″ Perforated Strips 3 by the bolts 4 to the Angle Girders as shown. The bolts 4 are used also to secure a No. 1 Clockwork Motor to the Angle Girders. Two Flat Trunnions 5 and 5½″×1½″ Flexible Plates 6 are secured by the same bolts to the Angle Girders, the Trunnions overlapping the Girders by three holes. Now bolt a 5½″ Strip 7 to the lower edge of each Flexible Plate and in them journal two 5″ Axle Rods 8. The front axle is journalled in the Trunnions 5, while the rear axle is carried in 1½″ Corner Brackets 9 bolted to the Angle Girders. A 4½″×2½″ Flexible Plate 10 is slightly bent as shown and bolted to the Angle Girders, one of the bolts also holding an Angle Bracket 11. To this a 2½″×1½″ Flexible Plate 12 is bolted and shaped to form the front nearside corner of the Carrier. A 5½″×1½″ Flexible Plate 13 is bolted to Plate 12, the upper bolts also securing a 5½″ Perforated Strip 14. The lower bolts also hold Angle Brackets 15, to which a 5½″ Strip 16 is fixed. The other side of the vehicle is constructed in a similar manner. A 3½″×2½″ Flanged Plate 17 is bolted to the sides of the Carrier and serves to cover in the rear part of the Motor. The sides are braced by a 3½″×½″ Double Angle Strip 18 to which a 5½″×1½″ Flexible Plate 19, bent as shown to form the driving compartment of the Carrier, is bolted. A 2½″ Strip serves to strengthen the offside of this compartment. A 5½″×½″ Double Angle Strip is bolted to the sides of the Carrier at the rear and to this two 2½″×1½″ Flexible Plates forming the back, are bolted.

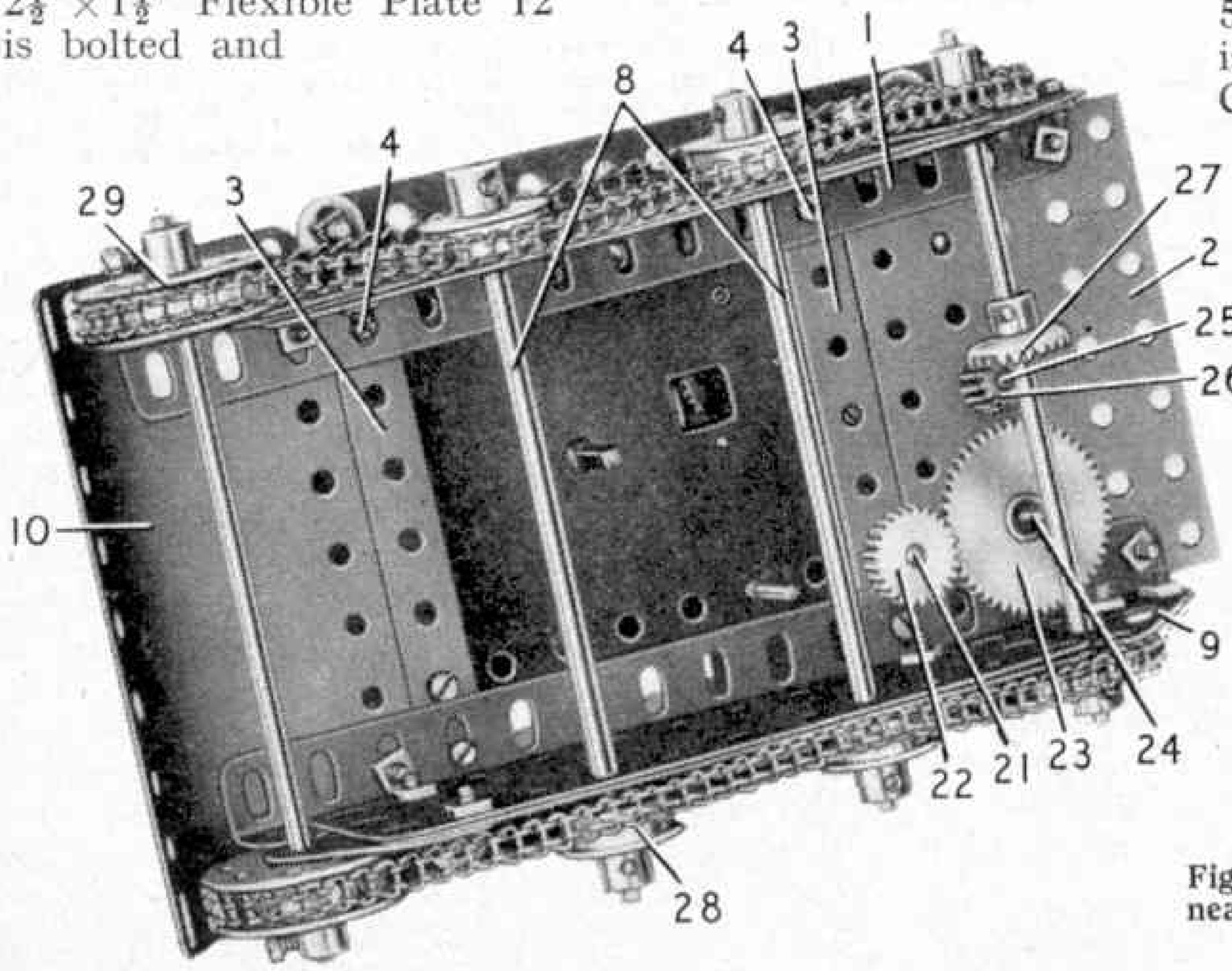


Fig. 4. The Carrier seen from underneath, showing how the Motor drive is transmitted to the tracks.

To the output shaft of the No. 1 Clockwork Motor, a 25-teeth Pinion 20 is fixed, and it meshes with a 50-teeth Gear Wheel carried on a 2″ Axle Rod 21 journalled in corner holes of the Motor. This

(*Continued on page 305*)

DINKY TOYS NEWS

Service Station In Kit Form

By THE TOYMAN

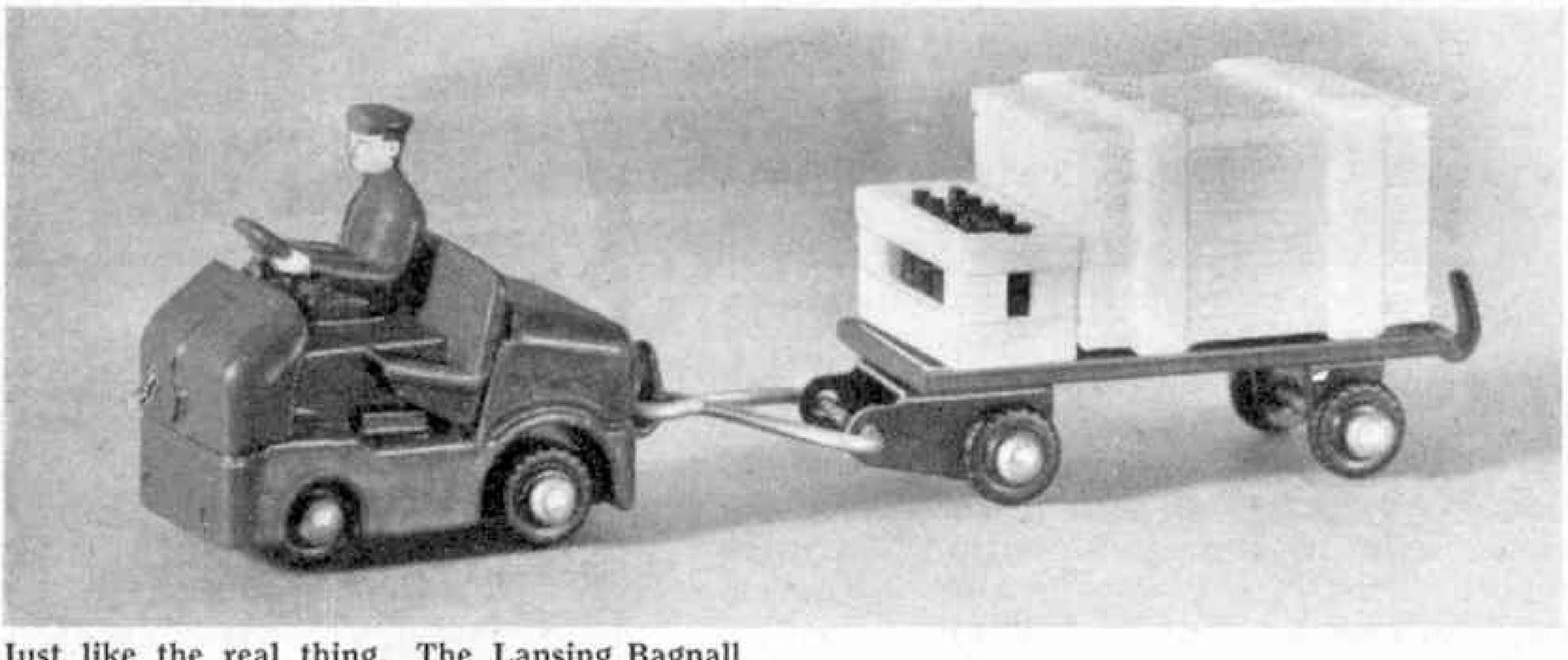
The new Dinky Toys Service Station forms the centre-piece of this layout. In the foreground, on the island carrying the petrol pumps, are two of the new Dinky Toys Tyre Racks which are also referred to in this article.

SOME splendid new accessories are added this month to the constantly growing range of Dinky Toys models, and I am sure they will bring delight to many collectors.

It is difficult to know where to start in describing them, but I think we should begin with an item which readers have been requesting for some time—a Service Station. Our new model, which you see illustrated in the picture above, is in moulded kit form. It is built in modern style with buff coloured walls and has an angled roof which is relieved by transparent skylights. These are fitted with stone coloured frames which cover the greater part of the roof area, making the inside of the building light and airy. There are eighteen skylights in all, two windows at either side of the garage and one at each end.

Both back and front of the garage are fitted with shutter-type doors, in royal blue, which are skilfully made to open and close vertically. The front of the Service Station carries a facia board running the length of the building bearing the appropriate lettering "Dinky Toys Service Station". A painted clock in the centre adds another touch of realism to this excellent model, the framework of which is made of moulded polystyrene. The shutter doors are of nylon.

There will also be available a special Lighting Kit (Dinky Toys No. 787), to fit the Service Station. Each of the two interior beams of the building is formed to carry the lamp from one of these kits so that either one or two kits can be used to



Just like the real thing. The Lansing Bagnall Tractor and Trailer with a load of Dinky Toys accessories.

illuminate the interior. The lights are operated from any 4½-volt battery. The Service Station is provided in a neat box, on the inside of which are instructions on how to assemble the building and how to operate and use the Lighting Kit.

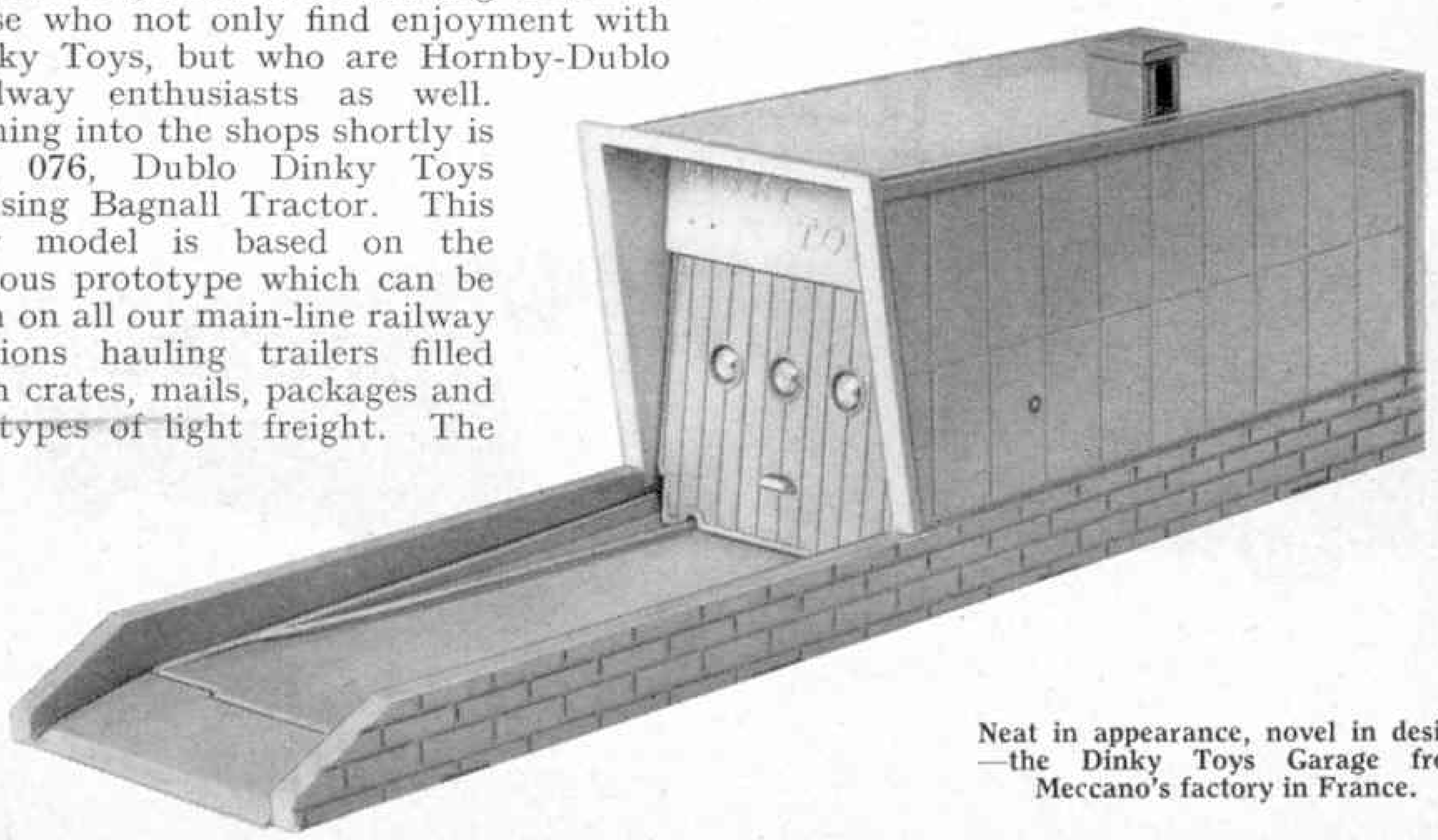
For those interested in garages as distinct from service stations, there is, of course, the novel model designed at our Dinky Toys factory at Bobigny, near Paris, and on sale in this country. It is illustrated at the foot of this page, and I made reference to it in these notes a month or two ago. Finished in blue and grey it is a very neat-looking little job. By an ingenious device, a Dinky Toys model standing on the runway, which is part of the garage, can enter and leave the building by automatic means. The new Service Station, which is 13¼ inches long, is Dinky Toys No. 785 and the Garage is No. 502.

And now, here is interesting news for those who not only find enjoyment with Dinky Toys, but who are Hornby-Dublo Railway enthusiasts as well. Coming into the shops shortly is No. 076, Dublo Dinky Toys Lansing Bagnall Tractor. This new model is based on the famous prototype which can be seen on all our main-line railway stations hauling trailers filled with crates, mails, packages and all types of light freight. The Dinky Toys model is of the Lansing Bagnall TD200 diesel-engined tractor and trailer.

The model, which you see illustrated, is finished in British Railways red with black moulded wheels. The tractor is complete with driver, in blue uniform, and hauls a smart four-wheel trailer fitted with towing hook and swivelling front wheels.

In practice, these tractors often haul half a dozen or more trailers along the busy station platforms, winding in and out like sinuous mechanical snakes, to the great delight of any children who may be around. You will be able to obtain much of this air of realism with your own model, as the trailers will be sold separately at Dinky Toys dealers.

Finally, we come to another new accessory which can be used most successfully in conjunction with the Service Station. It is a Tyre Rack, fitted with 21 Dinky Toys tyres. The Rack itself is finished in bright green with the Dunlop



Neat in appearance, novel in design—the Dinky Toys Garage from Meccano's factory in France.

sign in correct lettering and colour on the front. The tyres, which include four of the whitewall type, range in size from $\frac{1}{2}$ inch to $\frac{13}{16}$ inch, and cover the requirements for most of the Dinky Toys models. The Tyre Rack is Dinky Toys No. 786, and you can see, in our first picture this month, what a wonderful effect it creates at the front of the new Service Station. Two of the Tyre Racks, together with an Esso Petrol Pump Station, have been mounted on segments from the Pavement Set.

There is just room to add a final reminder about the Clean Licences Competition to readers who hold Dinky Toys Collectors' Licences. Entries can now be sent to this Headquarters and should arrive not later than the last day of June. If you wish your Licence to be returned after judging, please enclose with your entry a stamped addressed envelope.

An April winner: Andrew Golds of Colyton Close, Welling, Kent, who was successful in our monthly £2 competition.

DINKY RHYMES: TELEVISION TRIO

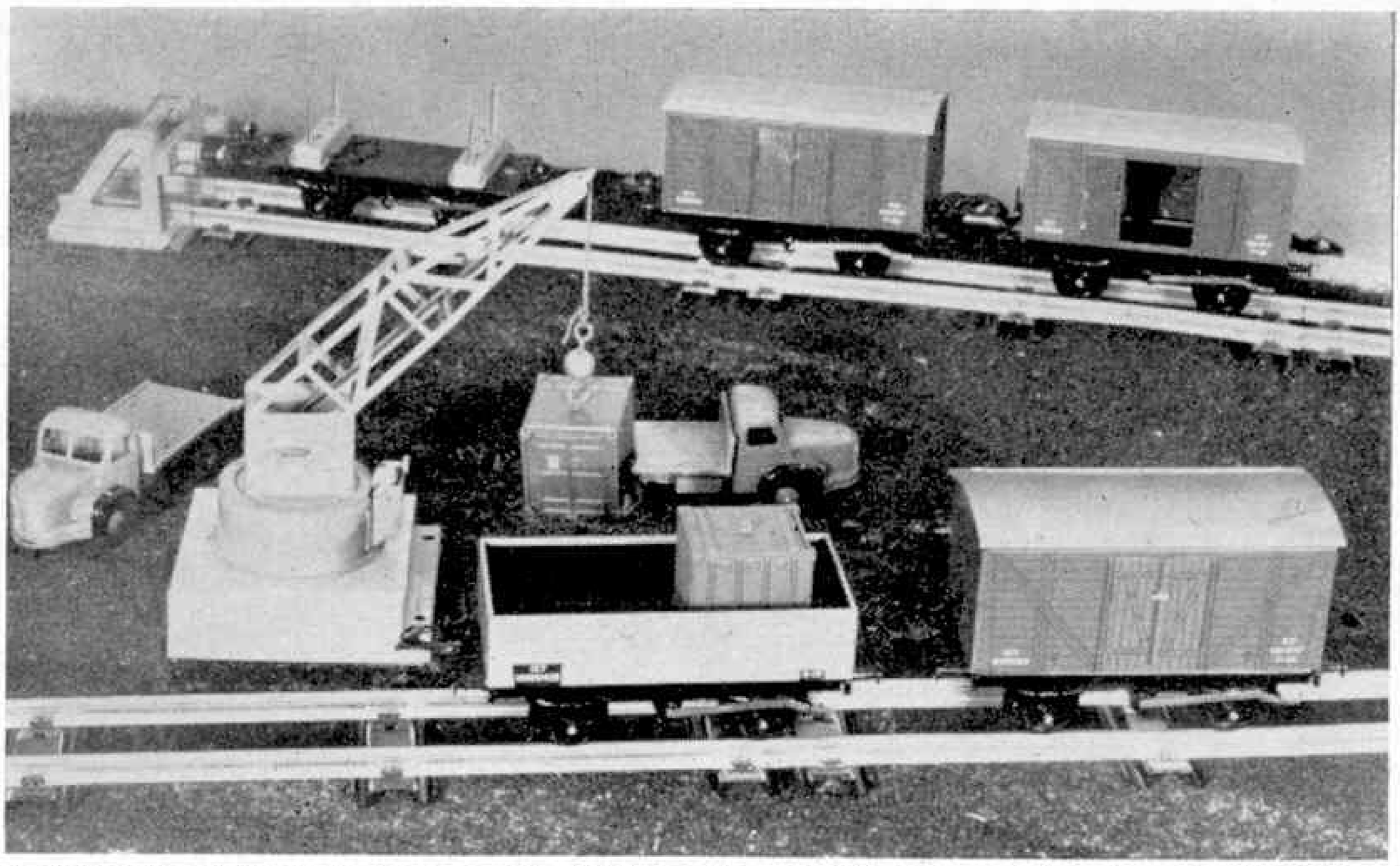
I receive many letters about the Dinky Toys rhymes published in this Magazine and in the Dinky Toys Newsletter, and I am delighted to know they are so popular. This month our rhyme is extended to cover three vehicles—the very popular Television trio which, I am sure, provide endless hours of entertainment for their proud owners.

Here the three famous vehicles—the B.B.C. Roving Eye, the Mobile Control Room and the Extending Mast Vehicle—are described in verse.

Control, mobility the key
To outside TV shows;
Wherever there's a camera, the
Control Room also goes.

The race is fierce, the drivers keen,
The pace is do or die:
The thrills by millions can be seen
Thanks to the Roving Eye.

To beam the show, and bring to you
Your pleasure unalloyed.
This mast extends into the blue
With neat paraboloid.



Container transhipment in progress. The Platform Crane is lifting the container from the Berliet Flat Truck, Dinky Toys No. 581, into a Hornby No. 50 Wagon.

"Tommy Dodd" writes about:

Getting Outside

WITH the approach of the summer months, and particularly if these are as sunny as they were last year, our thoughts turn out of doors, and Hornby railway owners naturally think of the possibilities of running their trains outside. Given the right conditions, this is readily possible and you will remember that we have had one or two talks on this subject before.

In the course of these I have been able to speak about several layouts operated in the open air and of these one of the few that is a permanent outdoor affair is that of Mr. V. H. Cutts, of St. Albans. This layout was described in these pages in November last year, when I was able to show you a station scene. Now that we visit the railway again, at least in our picture at the top of the next page, let us approach the station from the road side of things, as we would if we were going to catch a train.

Realistic Station Approach

Clearly it was a fine day at *Rummies Hill*, as the station is called, when the photograph was taken and the many details of the realistic station approach show up clearly in the bright sunlight. The buildings themselves, and the various road vehicles are realistic enough in their own way, but the very natural effect that has been obtained adds considerable charm to the scene. Here the co-operation of Mrs. Cutts, who is the gardening expert of the family, is gratefully acknowledged by the railwaymen of the concern—Mr. Cutts and his boys, Christopher and John. Obviously much care and time has been taken in the choice and arrangement of the miniature plants that do so much to provide the natural atmosphere, and they must have been expertly tended.

Perhaps some of you will want to try to obtain similar effects, even if your railway cannot be left out of doors. If you have the necessary site for your track, then perhaps the cultivation of a few suitable miniature plants in appropriate places might be attempted so that they will be there for future train running occasions. It would be possible to give quite a long list of the different growths, but I will content myself by saying that the better known items

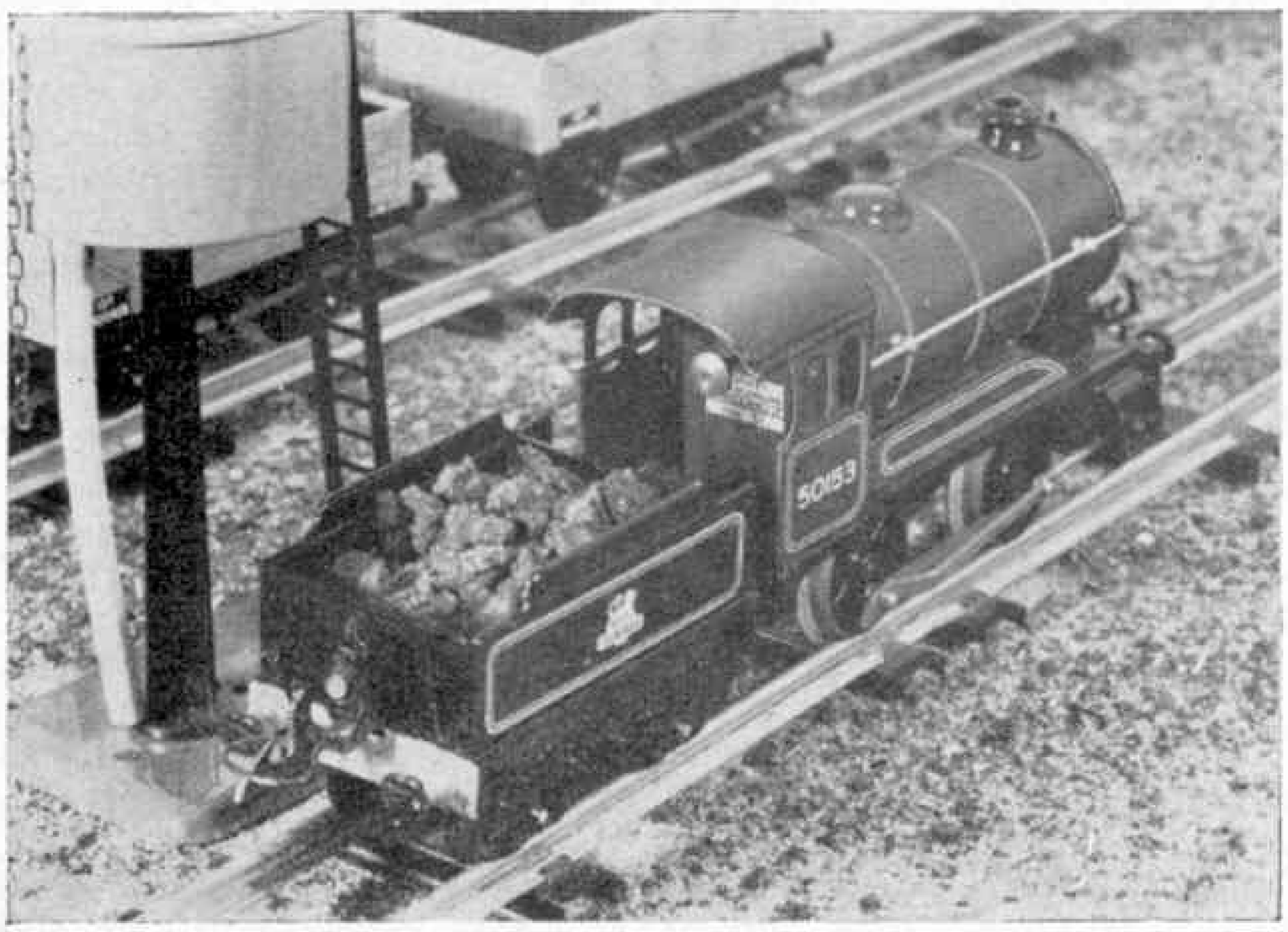
The road approach to "Rummies Hill" Station on the outdoor railway of Mr. V. H. Cutts, where various miniature plants help to make a charming scene. Photograph by John Osgood.

include miniature ivy, miniature roses and thyme, aubretia, alyssum and a rock plant or two. I am sure that some of you at least will be able to make such things grow successfully, but I cannot promise that this will apply to everyone. There is something in having "green fingers!" The gardening experts among my readers will know the plants concerned and I am sure will have no trouble with them.

Such natural arrangements will almost certainly mean that your railway will be arranged at ground level, when you do have it out of doors, and here a little care in selecting the site will be necessary. If you are lucky enough to have a nice smooth path or walk on which to lay your "permanent way," so much the better, but a really level lawn makes quite a good base if the grass is cut very short.

If you are unlucky enough to have your railway caught in a shower, make sure that *every* item is wiped dry indoors before you finish for the day. In fact, it is wise always to wipe over everything, particularly the track and other items that have been on the ground. Even if there has been no shower, they may have been in contact with moisture or a damp surface.

Some of you may be able to transport your indoor layouts, if they are arranged on baseboards, bodily out of doors. This is a simple way to arrange matters, but whatever you do, choose a dry and warm day for your outdoor operations, and make sure your board is properly supported.



All ready to go! A Hornby No. 51 locomotive prepared for duty waits at the Water Tank before going to pick up its train.

Plenty of Room

During coming months, I hope to show you pictures of one or two other layouts arranged out of doors. A big advantage of an outdoor situation is the amount of space it usually provides for certain developments that might be difficult to incorporate indoors.

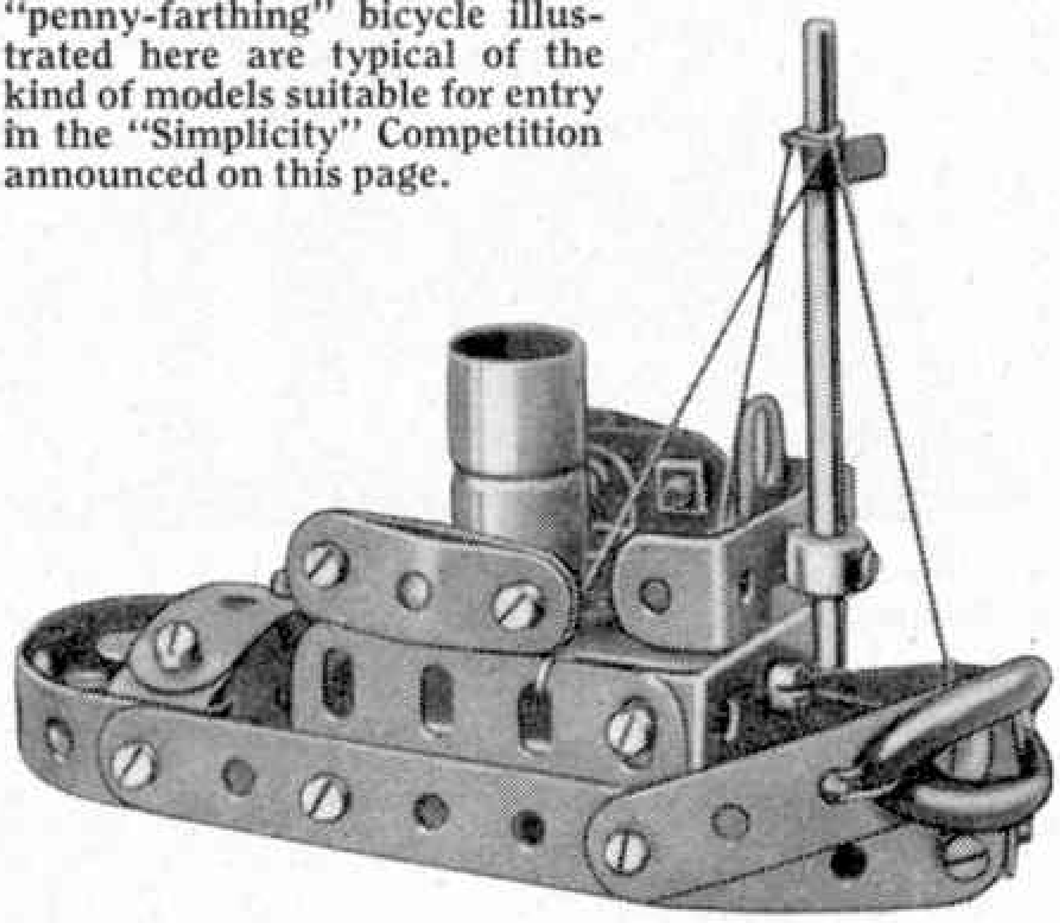
"Simplicity" Model-Building Competition

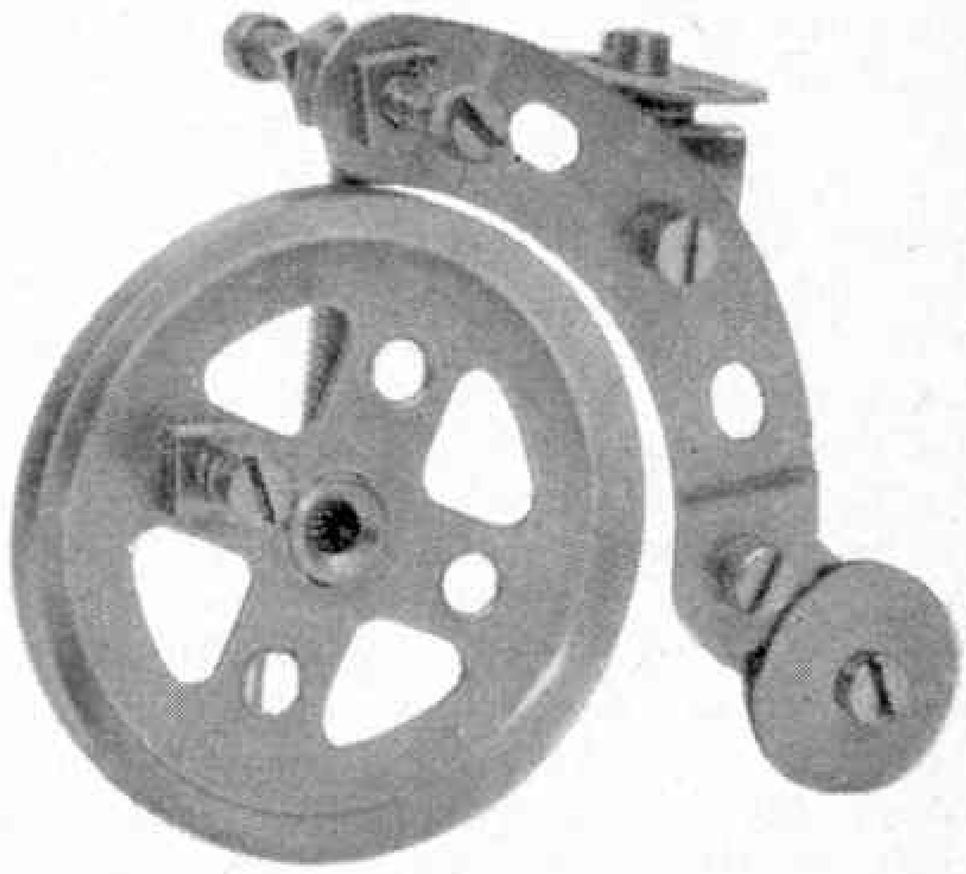
Big Prizes for Small Models

THIS month we announce another of the ever-popular Meccano "Simplicity" Competitions, which are specially suitable for the summer months, when model-builders, keen as they may be, do not wish to spend much time indoors, but, on the other hand, do not wish to suspend their Meccano activities entirely until the shorter days come round again.

The idea of this Competition is "simplicity in model-building," and the title indicates the type of model that may be entered. The purpose is to encourage model-builders to design simple but realistic models, using as few parts as possible. The two models shown will give you some idea of what we have in mind. Both were entries in "Simplicity" Contests some years ago.

The realistic little tug-boat and "penny-farthing" bicycle illustrated here are typical of the kind of models suitable for entry in the "Simplicity" Competition announced on this page.





You must not think, however, that in building a model for entry in this Contest you are limited to a certain size of Outfit or number of parts. This is not so. You may use whatever parts you like and as many as you wish, but you should keep in mind that the prizes will go to those who build the most ingenious models with the least possible quantity of parts consistent with a realistic appearance and good proportions.

Just as an engineer's true merit is best shown when he is endeavouring to construct a mechanism with limited material, or material that is not best suited to his purpose, so the genius of the Meccano boy will be more readily developed and revealed when he is "up against it", that is, when he cannot use an unlimited number of parts with which to build his models. It is not expected that models should actually work.

Models of this kind take only a few minutes to assemble, so there is no reason why every Meccano boy should not take part. You can choose any subject you like, and, after your model is completed, you may either obtain a photograph of it or make a good sketch. Then write your age, name and address on the back of the photograph or sketch and send it, in a sealed envelope, to "Simplicity Model-Building Competition, Meccano Ltd., Binns Road, Liverpool 13". Post your entry in time to reach Liverpool before August 31st.

All entries will be grouped into one section, but the age of the competitor will be taken into consideration in assessing the merits of his work.

For the best entries the following prizes will be awarded: First, Cheque for £5. 0. 0; Second, Cheque for £3. 0. 0; Third, Cheque for £1. 10. 0. Ten Prizes each of 15/–. Ten prizes each of 7/6d.

Don't forget, the Competition is open to every owner of a Meccano Outfit irrespective of age or residence, so set to work at once and make sure you have a chance to win a prize. And finally, make a note of the closing date:– August 31st, 1960.

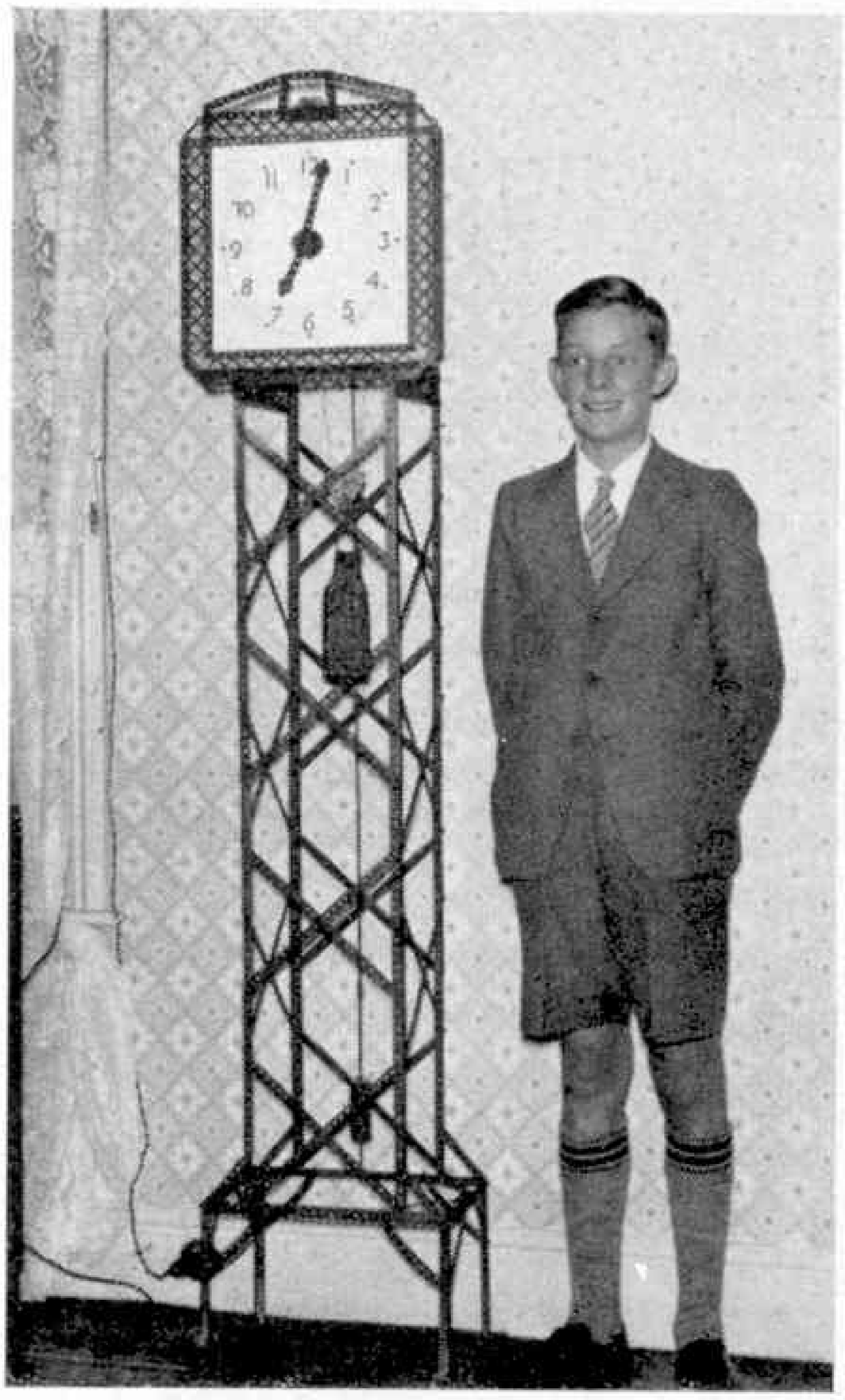
News and Ideas for Meccano Model-Builders

By

"Spanner"

A Meccano Clock's Fine Record

Many of my older readers will remember the fine Grandfather Clock that was described and illustrated in a Super Model Leaflet that was available between the wars. It was a model that attracted a lot of attention from advanced model-builders and hundreds were built by those who were fortunate enough to possess all the Meccano parts required in its construction. It was an excellent timekeeper and I know of many of these Clocks that have been in use for some years. Recently, however, I heard of one such Clock that is still going strong after almost continuous running for over a quarter of a century! It was built over 25 years ago by Mr. Ernest Alvis, Eastleigh, Hants., when he was a youth, and it is still working as well and as accurately as ever! Even the original escapement mechanism is still in action, and has not been altered or parts replaced since the day it was made. Mr. Alvis is now married and has a boy of his own. Alan is 13 years old, and is seen standing alongside this record-breaking Clock in the picture on this page. While the fine performance of this Clock is undoubtedly an excellent testimonial to the durability and precision of Meccano parts, its long working life is also largely due to the standard of construction and workmanship put into the assembly of the model by Mr. Alvis, and I would like to take this opportunity to congratulate him on his achievement.



The Meccano Grandfather Clock built by Mr. E. Alvis, of Eastleigh, 25 years ago. Alongside is his 13-year-old son, Alan.

A Mechanism of Interest to Crane Builders

Readers who like building cranes and have the necessary parts to enable them to go in for the larger types should find the winding mechanism shown in Fig. 1 of interest as it is quite easily adaptable to suit particular requirements.

It will be seen that the shaft of the winding handle 1, carrying a ½" Pinion 2, is engaged at one end by a 3½" Strip 4. The latter is bolted to the framework at 5 and is bent out a little to allow a Collar and a Washer to be placed on the shaft between the Strip and the frame of the gear-box. The Strip 4 thus serves as a spring and tends to retain the operating shaft in such a position that the Pinion 2 is out of engagement with the Gear Wheel 3 on the winding drum shaft. Consequently, in order to rotate the drum, the handwheel 1 must be pressed inward while it is rotated; immediately it is released the Strip 4 returns it to its former position, throwing the Pinion 2 out of gear with the Gear Wheel 3. On the other end of the drum 6 a Flanged Wheel 7 and a Bush Wheel 8 are mounted. These form a small brake drum around which a cord brake band 9 is wound. One end of the band is tied to a Flat Bracket mounted on a Rod 10, and the other end is given a few turns round the Rod, and is secured to a Bolt inserted in a Collar on Rod 10.

On operation of the handle 11, the Rod 10 winds up the Cord 9, so exerting a

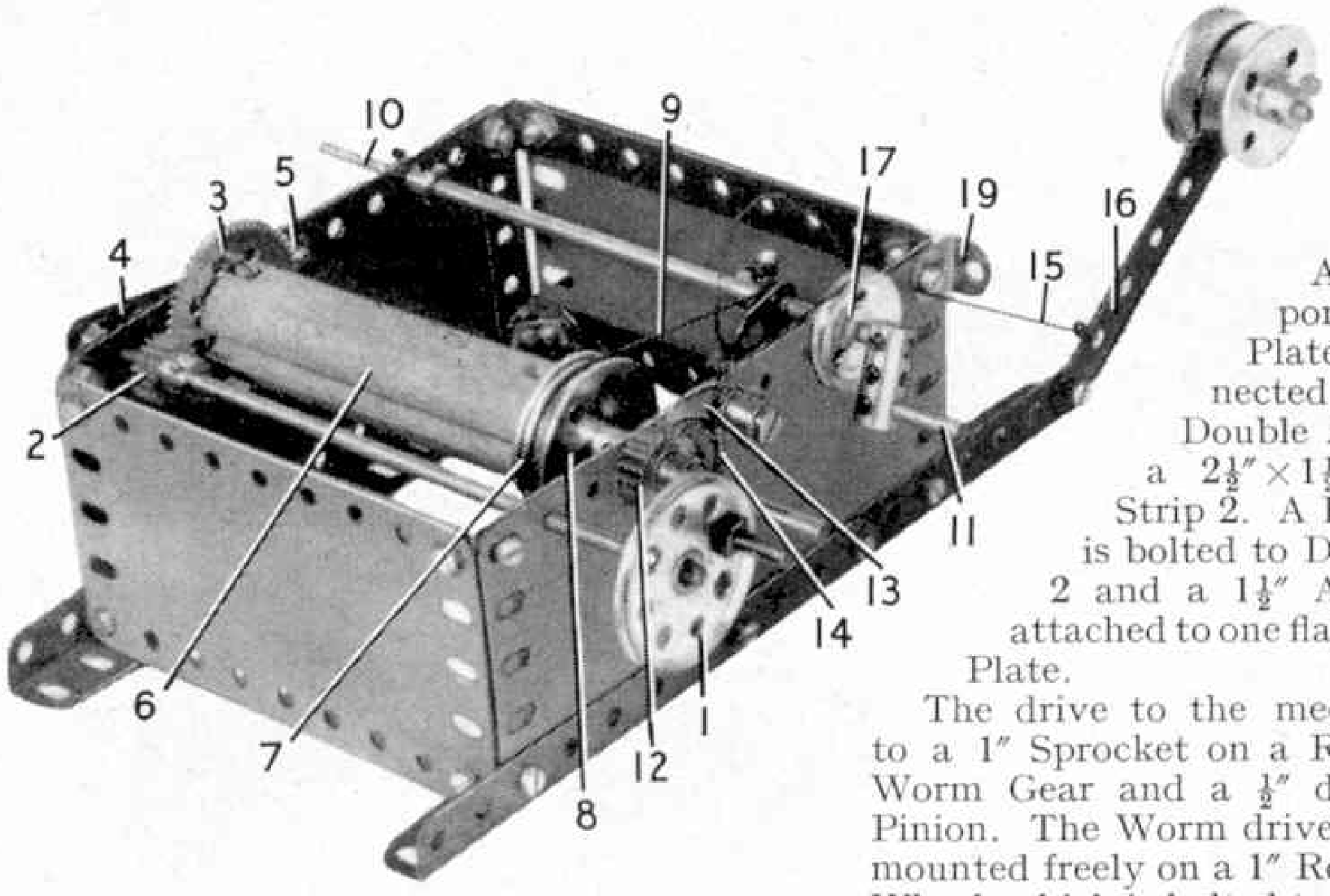


Fig. 1. A winding mechanism for cranes.

braking effect on the winding drum. A Ratchet Wheel 12 is fixed to the shaft of the latter and is engaged by a Pawl 13. The necessary pressure is imparted to the Pawl by a piece of Spring Cord 14. The Cord 15 tied to the Pawl is connected to a weighted lever 16, and is guided over a 1″ loose Pulley 17 that rotates freely on Rod 10.

Normally the weighted lever 16 rests against a stop 19 and in this position allows the Pawl to engage the Ratchet Wheel 12. If the arm 16 is released from the stop and moved backwards however, the Cord pulls the Pawl clear of the teeth of the Ratchet and so leaves the winding drum free to rotate.

An Automatic Reversing Mechanism

Details of the automatic reversing device shown in Fig. 2 were sent to me some time ago by Mr. G. Bowker, Bolton. The mechanism base plate is a $3\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate with a $3\frac{1}{2}''$ Angle Girder bolted to each of its longer edges. The Angle Girders support $3'' \times 1\frac{1}{2}''$ Flat Plates, which are connected by a $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip 1 and a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Double Angle Strip 2. A Double Bent Strip is bolted to Double Angle Strip 2 and a $1\frac{1}{2}''$ Angle Girder 3 is attached to one flange of the Flanged Plate.

The drive to the mechanism is taken to a 1″ Sprocket on a Rod that carries a Worm Gear and a $\frac{1}{2}''$ diameter, $\frac{1}{2}''$ Face Pinion. The Worm drives a 57-tooth Gear mounted freely on a 1″ Rod fixed in a Bush Wheel, which is bolted to the Double Angle Strip 1. The Gear is supported on the Rod by a Collar. A $\frac{3}{4}''$ Bolt passed through one of the holes in the Gear is fitted with a Collar and two Washers and then its shank is fixed in the boss of a Slide Piece. A $4\frac{1}{2}''$ Strip 4 is passed through the Slide Piece and is lock-nutted to the Angle Girder 3.

A 57-tooth Gear on a Rod 5 is arranged to mesh with the $\frac{1}{2}''$ diameter, $\frac{1}{2}''$ Face Pinion. Rod 5 carries a $\frac{1}{2}''$ Pinion, a Collar, a Coupling 6, a Collar and a second $\frac{1}{2}''$ Pinion. A 1″ Rod in Coupling 6 engages a hole in the Strip 4. *(Cont. on page 305)*

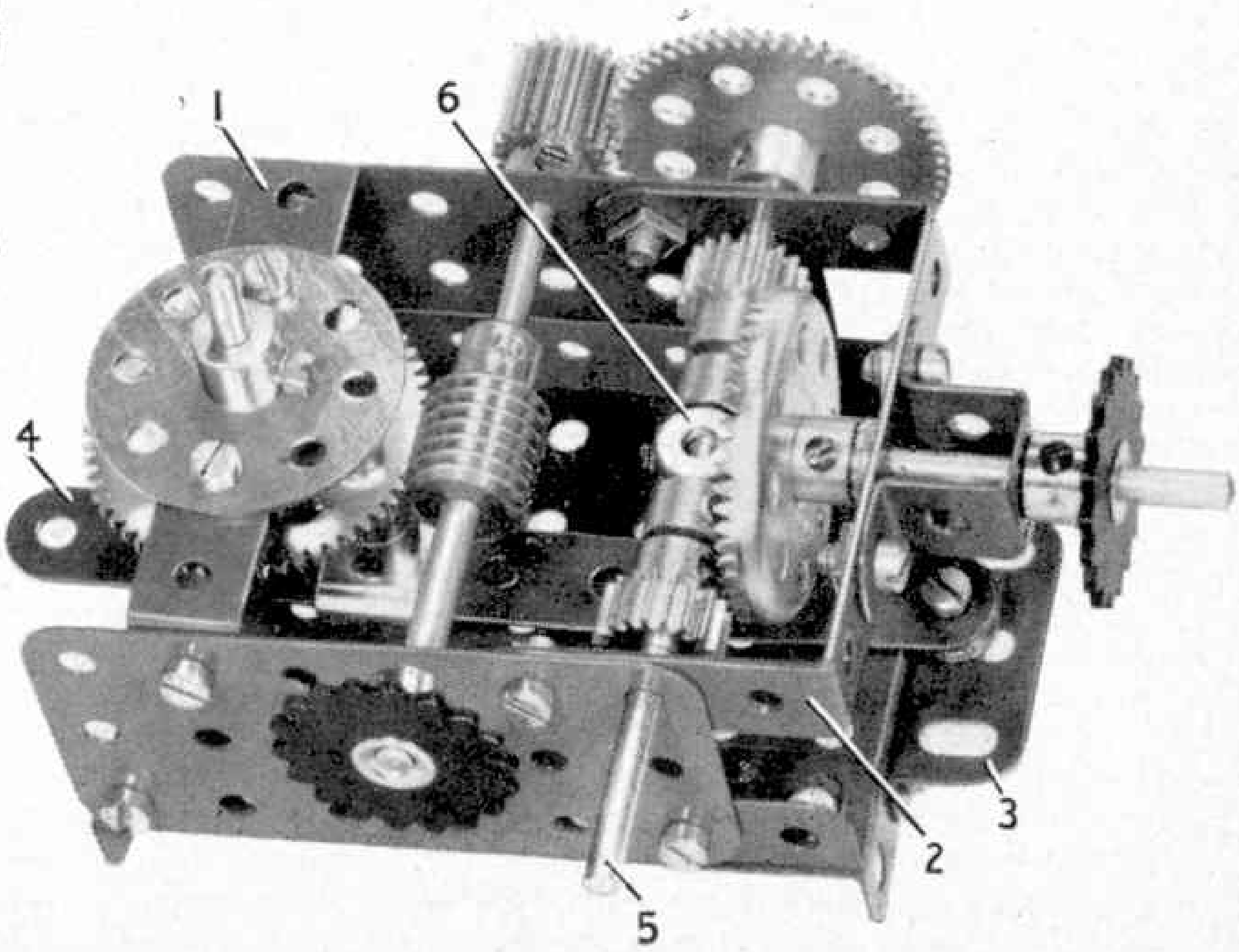


Fig. 2. An automatic reversing mechanism designed by Mr. G. Bowker, Bolton.

MODEL OF THE MONTH

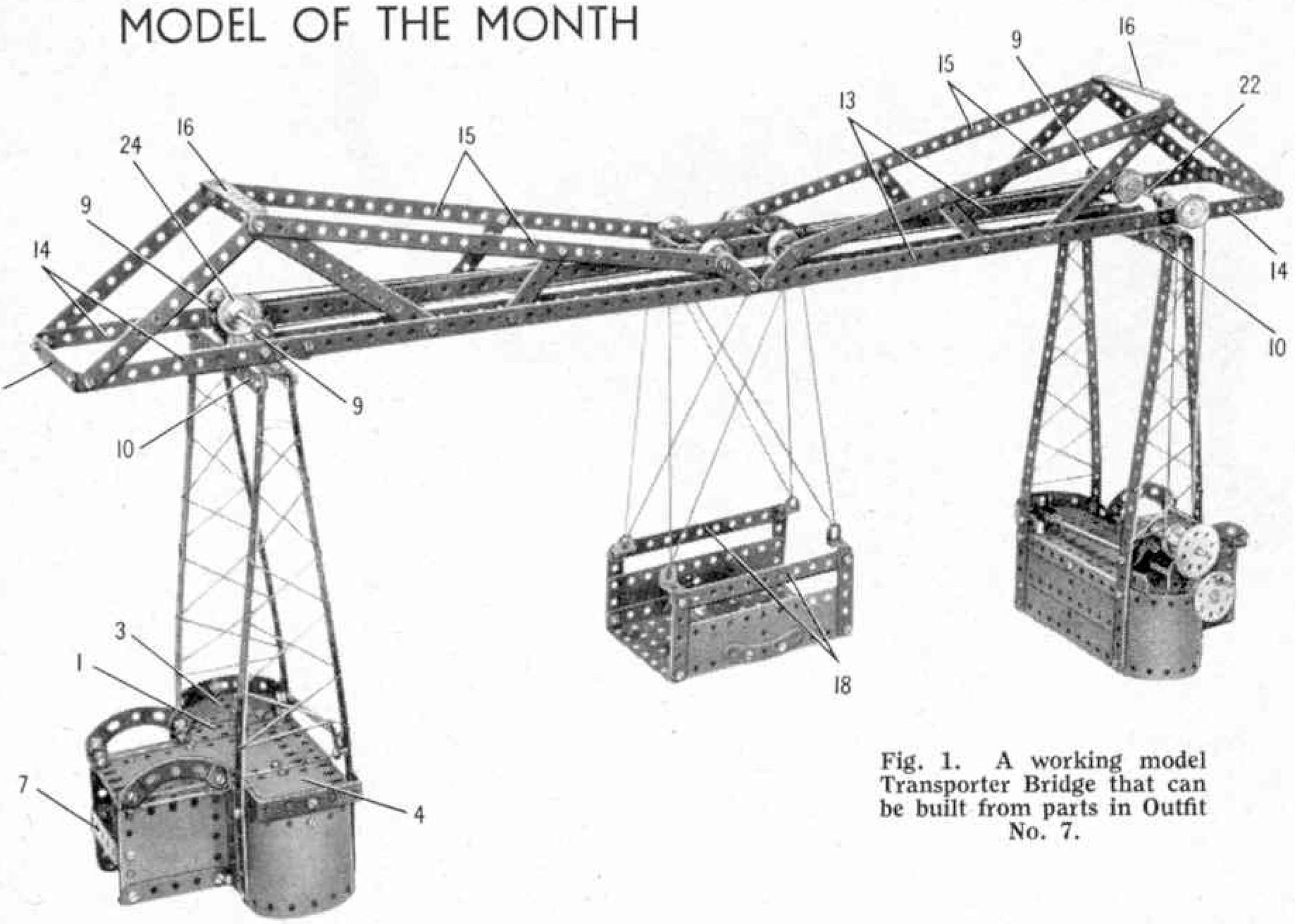


Fig. 1. A working model Transporter Bridge that can be built from parts in Outfit No. 7.

Transporter Bridge

WHEN it is desired to bridge a river, the local conditions must, of course, be taken carefully into consideration before the type of bridge can be decided upon. If the river is navigable the bridge must be placed at such a height that it will not interfere with shipping. But in cases where the river banks are almost on the same level as the river, the construction of a bridge many feet above the water line is not generally possible, owing to the cost or impracticability of building the necessary inclined approaches.

Such difficulties as these have been successfully overcome in a few cases by the construction of "transporter" bridges. These consist essentially of a girder, suspended at such a height that it clears the tallest ships' masts, and fitted with rails carrying a trolley from which a car is suspended by steel cables. The car is moved across the river by steam or electric power. Since the level of the car platform is the same as that of the approaches, traffic passes direct from the shore into the car, and vehicles and pedestrians are carried bodily across the river.

One of the most famous examples of a Transporter Bridge is that which crosses the River Mersey and the Manchester Ship Canal, between Runcorn and Widnes. Readers will remember that a picture and some details of this fine old bridge, soon to be replaced by a new high-level bridge now being constructed alongside it, were included in the April issue of the Magazine.

Although there are not many examples of this kind of bridge in actual practice, transporters are most interesting to watch in action and they make fascinating subjects for Meccano models. We have, therefore, chosen a Transporter Bridge as the subject of a further model in our "Model of the Month" series. The model is shown complete in Fig. 1 and a close-up of one of the shore towers, in which the operating mechanism is housed, appears in Fig. 2. The model is quite easy to assemble and

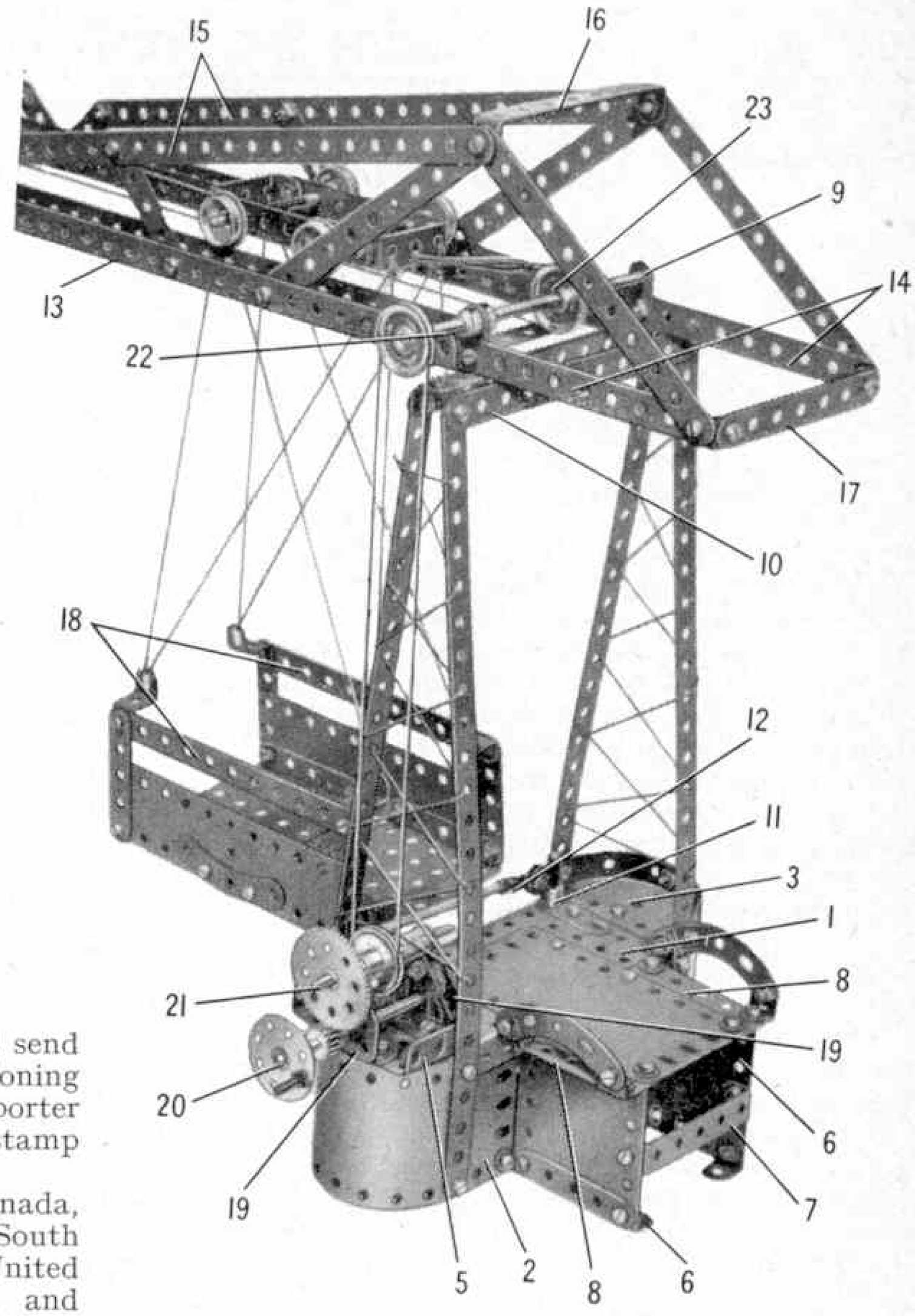


Fig. 2. The right-hand tower, showing the winding mechanism that controls the movement of the carriage.

can be built from parts in Outfit No. 7.

If the construction is neatly carried out the finished effect is most attractive, and for those model-builders who like experimenting on their own there is plenty of scope for them to modify, or elaborate on, the construction as much as they desire and the parts available to them will allow. It is also possible to fit a Clockwork or Electric Motor to drive the model in place of the manual operation for which the model illustrated is designed.

Many readers will no doubt want to build this Transporter Bridge and full constructional details and a list of the parts required are available free of charge on request. Readers living in Great Britain should send a letter to the Editor mentioning "Model of the Month—Transporter Bridge" and enclosing a 2d. stamp to cover postage.

Readers living in Canada, Australia, New Zealand, South Africa, Rhodesia, Ceylon, United States of America, Holland and Italy can obtain the instructions by writing to our main agents for these countries, also, of course, enclosing appropriate stamps for postage.

Please make your application early, otherwise you may find that supplies of the instruction sheets have run out. We have prepared sufficient copies of the instructions to cover an estimate of the number of requests we will receive from model-builders, but in the event of an unprecedented demand it is possible that supplies may prove inadequate. So send in your application as quickly as possible and avoid disappointment. This applies equally to readers in this country and overseas.

Easy Model-Building—*(Continued from page 295)*

Axle Rod also carries a 25-teeth Pinion 22, which meshes with a 50-teeth Gear Wheel 23. This Gear Wheel is carried on a 1½" Axle Rod 24 journalled in the Flanged Plate 2 and a 3½" Perforated Strip bolted to two 1½" Angle Girders attached to the Flanged Plate, which also carries a 19-teeth Pinion meshing with a 57-teeth Gear Wheel. The Pinion is fixed on a 1½" Rod 25 held in the 3½" Strip and the Flanged Plate. A 15-teeth Pinion 26 also secured to this Rod, meshes with a 25-teeth Contrate Wheel 27 mounted on the rear Axle. Two 1" Sprocket Wheels are fixed on this axle. Two ¾" Flanged Wheels 28 are secured to each of the Rods 8 and Wheel Discs and 1½" Flanged Wheels 29 are fixed to the front axle. Sprocket Chain is arranged as shown to form the tracks.

News and Ideas for Meccano Model-Builders—

(Continued from page 303)

The output shaft is mounted in the Double Angle Strip 2 and in the Double Bent Strip. It is fitted with a 1½" Contrate spaced from Double Angle Strip 2 by two Washers.

As the Worm Gear drives its 57-tooth Gear, the Strip 4 is moved from side to side, and carries with it the Rod 5. The sliding movement of Rod 5 brings the ½" Pinions into mesh alternately with the 1½" Contrate, and thus the direction of rotation of the output shaft is reversed periodically.

To adjust the mechanism the Rod 5 should be arranged with its 57-tooth Gear in the centre of the ½" face Pinion, while each ½" diameter Pinion should be just out of mesh with the 1½" Contrate.

WITH THE SECRETARY

Club and Branch News

A VISIT TO THE NORTH-EAST

During a visit, on business, to the North-East recently, I took the opportunity of calling in on the members of a Meccano Club whose enthusiasm for their work is unbounded. It is the Consett and District Y.M.C.A. Meccano Club, situated in the very heart of the Durham industrial belt, the town itself being a steel town.

With me was Mr. A. Blackett, the Works Office Manager of Meccano Limited, and a native of Tyneside, who showed me many of the industrial activities that are carried on in that part of the world, with its sharp contrast between stark towns and old-world villages, and its picturesque place names such as Coatham Mundeville, Edmundbyers, Windy Nook and the unique Pity Me.

We reached the Consett Club on the day on which they were holding an open meeting in their fine and spacious headquarters at the Y.M.C.A. Club, in the centre of the sprawling township. We were met by a crowd of eager youngsters with shining faces and impeccable manners, and I must say I was most impressed by their behaviour, by their knowledge of Meccano, and all it stands for, and by their ability as model-makers.

Annual Bean Feast

Mr. John R. Goodrum, the Club Leader, invited us to stay as guests at the Club's annual Bean Feast–meat pie and potatoes, followed by ice cream and jelly–and there is no doubt that the meal was a complete success from every point of view. Young members of the Club gave toasts (in pop) including one of "The Guests", after the Loyal toast had been proposed, and altogether the occasion was run on correct and admirable lines.

I had the great pleasure during the evening of presenting awards for outstanding service to the Club to three young members—Malcolm White, Wilfred Wilson and Colin Craig. Afterwards we saw a colour film "Men of Consett" which told the story of the Durham area with its strange and fascinating coast line, its ancient churches and abbeys and, in sterner vein, the ironworks with their everlasting heat and flame and roaring furnaces, which are the life-blood of Consett.

In conclusion, these boys in this North-East corner of Britain showed me with pride how they are re-modelling their miniature railway and how, in their model room down below the meeting room level, they can handle most sorts of engineering problems. They were the first to agree that their knowledge of Meccano, gained over the years, has stood them in excellent stead in their model-building work generally, and they left me with the impression that they were delighted to see guests from the building where Meccano is produced for boys the world over.

ANOTHER NEW ZEALAND CLUB

Another New Zealand Club, St. John's, of Dunedin, has gained official recognition by qualifying for affiliation with the Meccano Guild, and their first report—an excellent one—is summarised on these pages. On behalf of myself and the staff at Headquarters, and of all other Meccano Clubs, I extend a cordial welcome to the St. John's M.C., and wish them a very successful career.

Mention of New Zealand reminds me that this year the Christchurch M.C. in that country will be celebrating their thirtieth anniversary, a very fine record.

CLUB NOTES

INDIA

MYSORE M.C.—The Club celebrated the completion of its seventh year in April last with an excellent Exhibition. All members are proud of the fine reputation the Club has attained by its splendid Exhibitions, and enthusiasm continues at a high level. *Secretary:* M. N. Radhakrishna, 16 Mothikhana Buildings, Santhepet, Mysore 1, India.

NEW ZEALAND

ST. JOHN'S (DUNEDIN)—This Club was formed in September 1959 and made such rapid progress that by April of this year it qualified for affiliation with the Meccano Guild. Regular meetings are held in a room that adjoins the Anglican Church Hall and has been made available to the Club rent free. Membership is increasing steadily.

Working model railways are always one of the main attractions at Club and Branch Exhibitions. This Hornby-Dublo display at a Launceston M.C. Exhibition was always surrounded by a crowd of fascinated spectators.

The Club's first session ended at the close of last year with a fine display of working models, and a sumptuous afternoon tea provided by the mothers of the members. After the meal there was a concert, and during the event Mr. Parr, the adult Leader, presented Robert Nesbitt with a prize in recognition of his having attained the highest marks for model-building in 1959.

The members have been grouped into two teams, named Sprockets and Washers respectively, and a friendly rivalry in model-building is encouraged. In a recent "contest" the Sprockets chose "A wharf scene" as the subject of their model-building effort and the Washers "An Army convoy." The completed displays were set up at a later meeting and judged by Mr. Parr, who decided in favour of the Sprockets. But the Washers are not downhearted! *Secretary:* Mr. W. J. Earl, 60 Ann Street, Roslyn, Dunedin N.W.1, New Zealand.

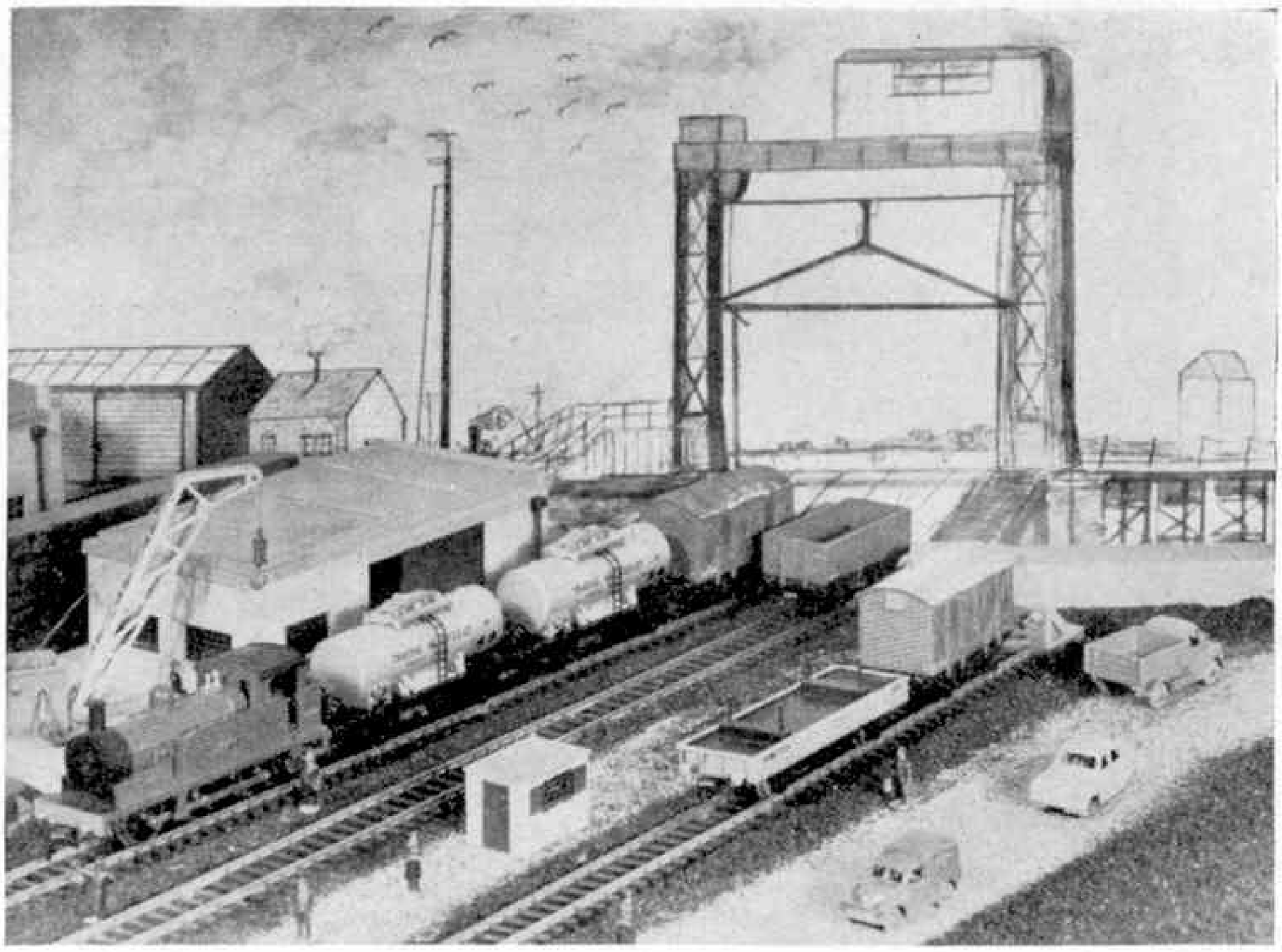
NIGERIA

GINDIRI SECONDARY SCHOOL M.C.—Ten new members were admitted at the first meeting of the new Session. Members are divided into three groups, each under a group Leader, an arrangement that enables varied activities to be carried on at the same time; one group Meccano model-building, another busy with model railway work, and so on. *Secretary:* Mtaku G. Mshelia, Gindiri Boys' Secondary School, P.O. Barakin Ladi, via Jos, Northern Nigeria.

BRANCH NEWS

KIDDERMINSTER MODEL RAILWAY CLUB—Operations on the recently completed Branch layout have had to be suspended temporarily, and the layout dismantled, while extensive emergency repairs to the Clubroom roof are carried out. It is hoped to resume track operations in the near future. *Secretary:* J. T. Hill, Kidderminster.

AVIARY MODEL RAILWAY CLUB (LEEDS)—Work on the extension of the layout has continued, and model-making in connection with it has included the construction of a viaduct. Track nights, debates and an occasional quiz have added variety to the programme. A debate on whether road or rail travel was best proved very interesting, and ended in a victory for the railway supporters by a small majority. At one meeting a member gave an interesting talk on *Buses*. A Club photographic competition has been arranged and will be held soon after the summer holidays. It is hoped that many of the members will submit entries. Until recently each book in the Club library was numbered and this number was entered in a record book when the book was issued to a member. Now, the librarian has adopted the system used in public libraries in which each member has a Club library ticket and surrenders it in exchange for the loan of a book. *Secretary:* J. Baker, 10 Salisbury Terrace, Leeds 12.



The scene here, arranged against a train ferry background, includes Hornby-Dublo Traffic Services Tank Wagons and other rolling stock.

HORNBY RAILWAY COMPANY

By the Secretary

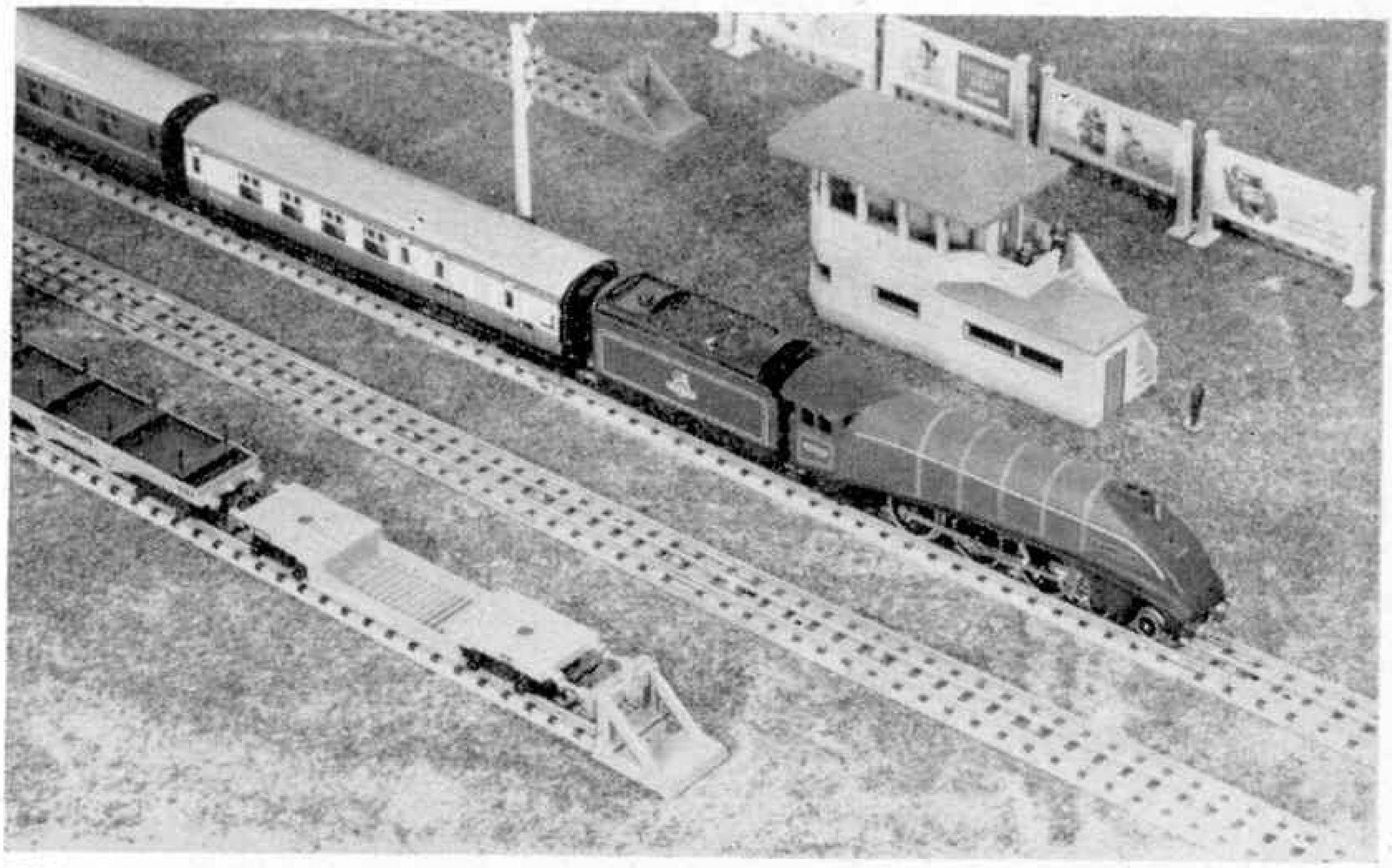
Using the New Tank Wagons

IN our last talk, I remarked on the international character of the Traffic Services Ltd. Tank Wagon, as this represents a type of vehicle employed for the transport of liquids in bulk between Great Britain and all countries of the European Continent except Spain and Russia. This involves transport by sea, via train ferry, and I have endeavoured to build up something of the train ferry atmosphere in the "back scene" of the picture above, in which two of these wagons are featured. Some of you will have layouts that already incorporate a dock branch. The development of this idea to include a train ferry berth, even if the gantries and other structures are merely part of a scenic background, will add to the interest of things generally.

Anchor Sign

Vehicles that have to operate over the tracks of different railway administrations and countries, such as the fleet of tank wagons operated by Traffic Services Ltd., must meet the requirements of the different authorities, and so the Hornby-Dublo Tank Wagon we are considering carries some of the special markings characteristic of the real ones. Compliance with the regulations governing vehicles operated internationally is indicated by a small oblong sign with the letters *RIV*. Suitability for train ferry traffic is indicated appropriately by the anchor sign that appears on a sort of little blackboard towards the left-hand end on each side. In addition, the vehicle number and the name of the originating country—*Great Britain*—are clearly visible. There are other marks on the real boards, too, but it has not been possible to reproduce these entirely as if reduced to scale their small size would make them illegible.

The tank itself is finished in the aluminium colour required for tanks carrying liquids above a certain degree of inflammability, and the warning words "No Naked Light" are boldly shown on the sides of the tank itself. Two large black stars on the tank side at the right-hand end means that the vehicles can be run in all but the fastest freight train services. There is, in addition, a small circular sign, indicating that the tank is fitted with wash plates, to keep the liquid from swilling about inside excessively while in transit.



With the Double Arm Signal showing "line clear", the Hornby-Dublo streamlined 4-6-2 "Mallard" speeds along the three-rail main line.

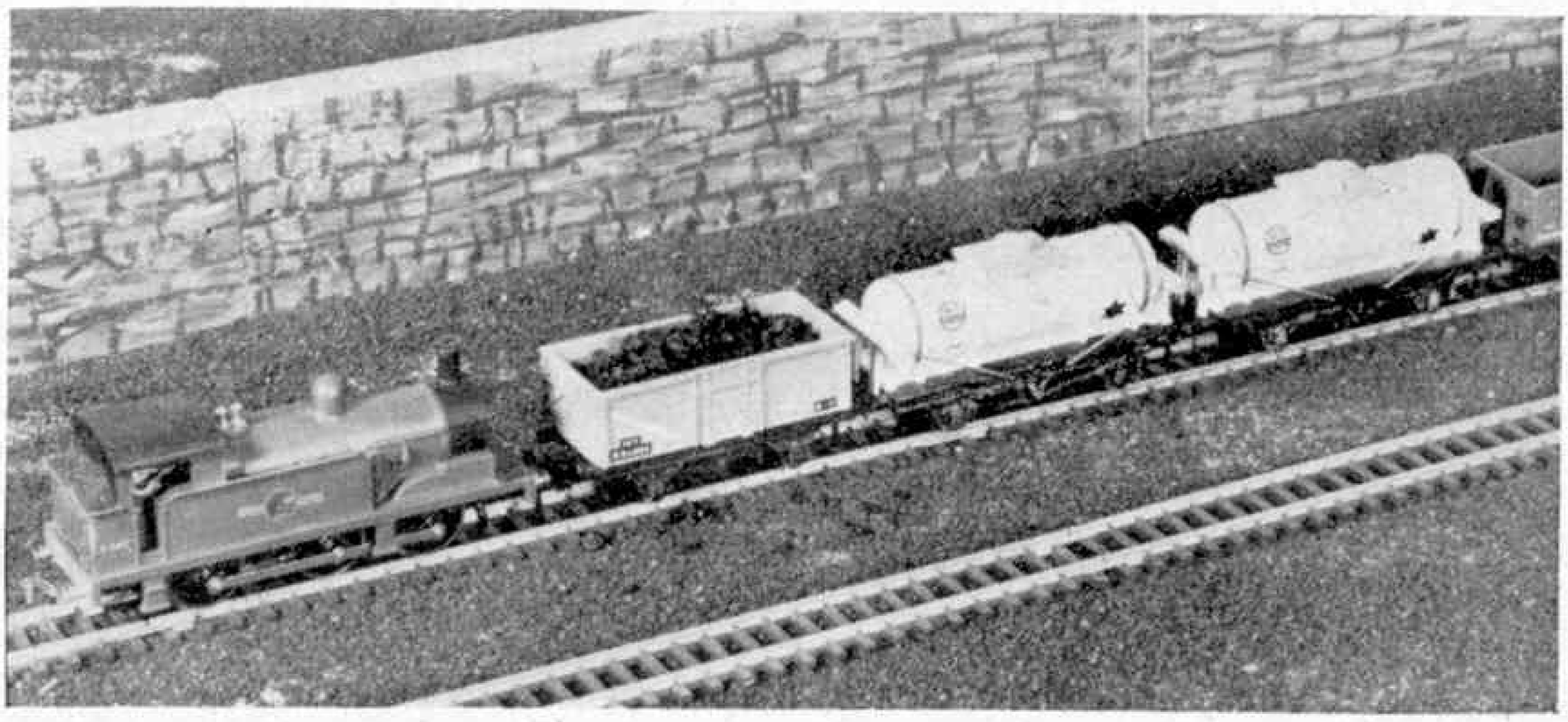
The tank is so placed on the base of the wagon that there is a short platform at one end, with protective railing. This is provided to accord with Continental practice, there being at the end of the platform a reproduction of the brake wheel provided for the use of real-life shunters.

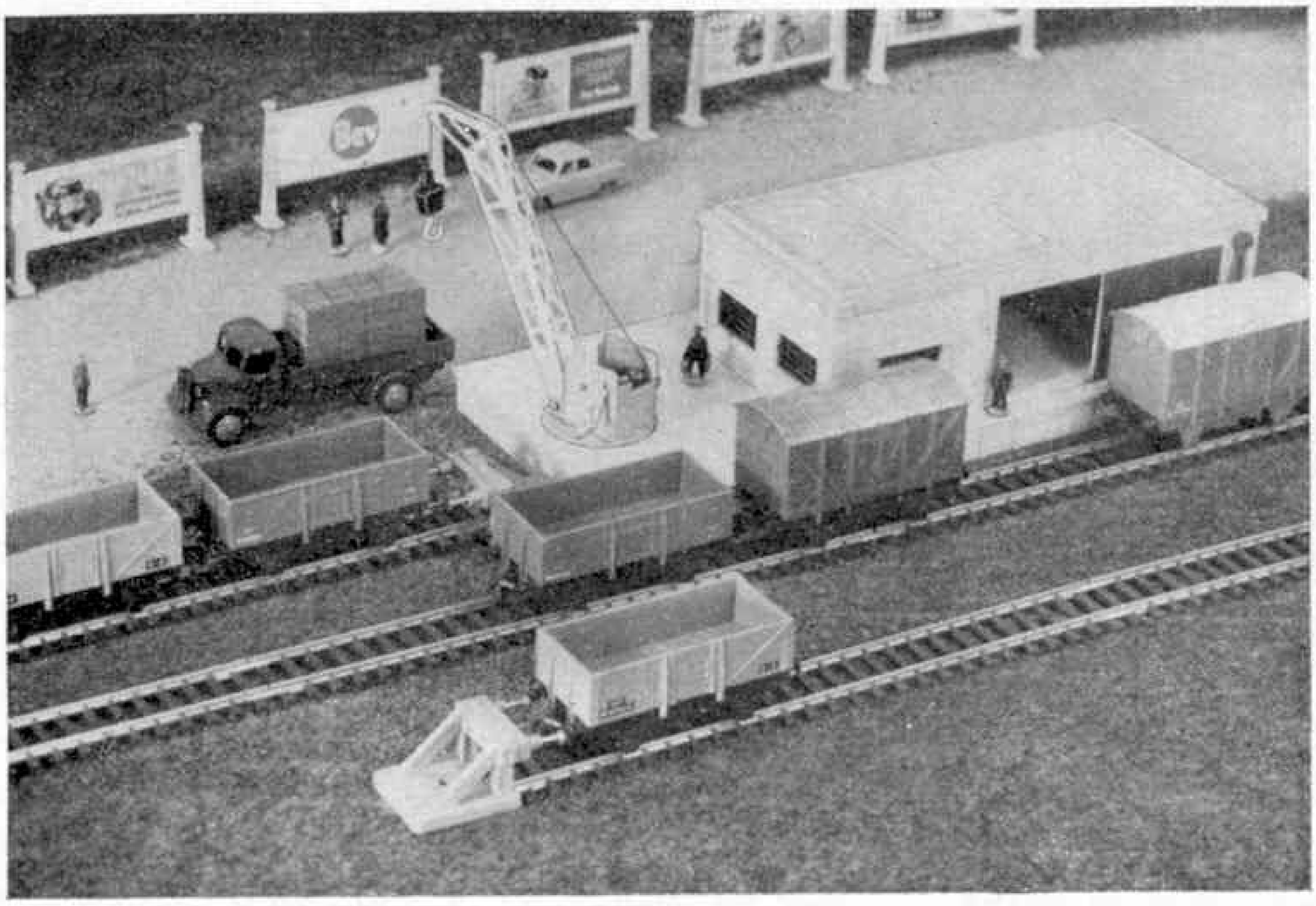
Widely-used Vehicle

For many of the details I have just quoted in connection with the operation of these vehicles and the purpose of the markings that appear on them, I am greatly indebted to Traffic Services Ltd., who have of course co-operated very closely in connection with the production of this excellent Hornby-Dublo miniature.

The I.C.I. Chlorine Tank Wagon, also a recent addition to the Hornby-Dublo range, is equally attractive in its own way, and represents the type of wagon widely used by the I.C.I. organisation for the transport of liquid chlorine in bulk. Here again I have to acknowledge the help of the operating firm, in providing details in connection with the wagons themselves and their uses. The liquid chlorine for industry is produced on a large scale in I.C.I. plants and tank wagons convey it to the points where it is required. The white colouring of the tank attracts attention immediately, as do the red bands round it at each end.

The Hornby-Dublo 0-6-0 Tank shunts a train including I.C.I. Chlorine Tank Wagons.





A yard scene in Hornby-Dublo including the Goods Depot assembled from the standard kit.

Freight Handling in Hornby-Dublo

By "The Engineer"

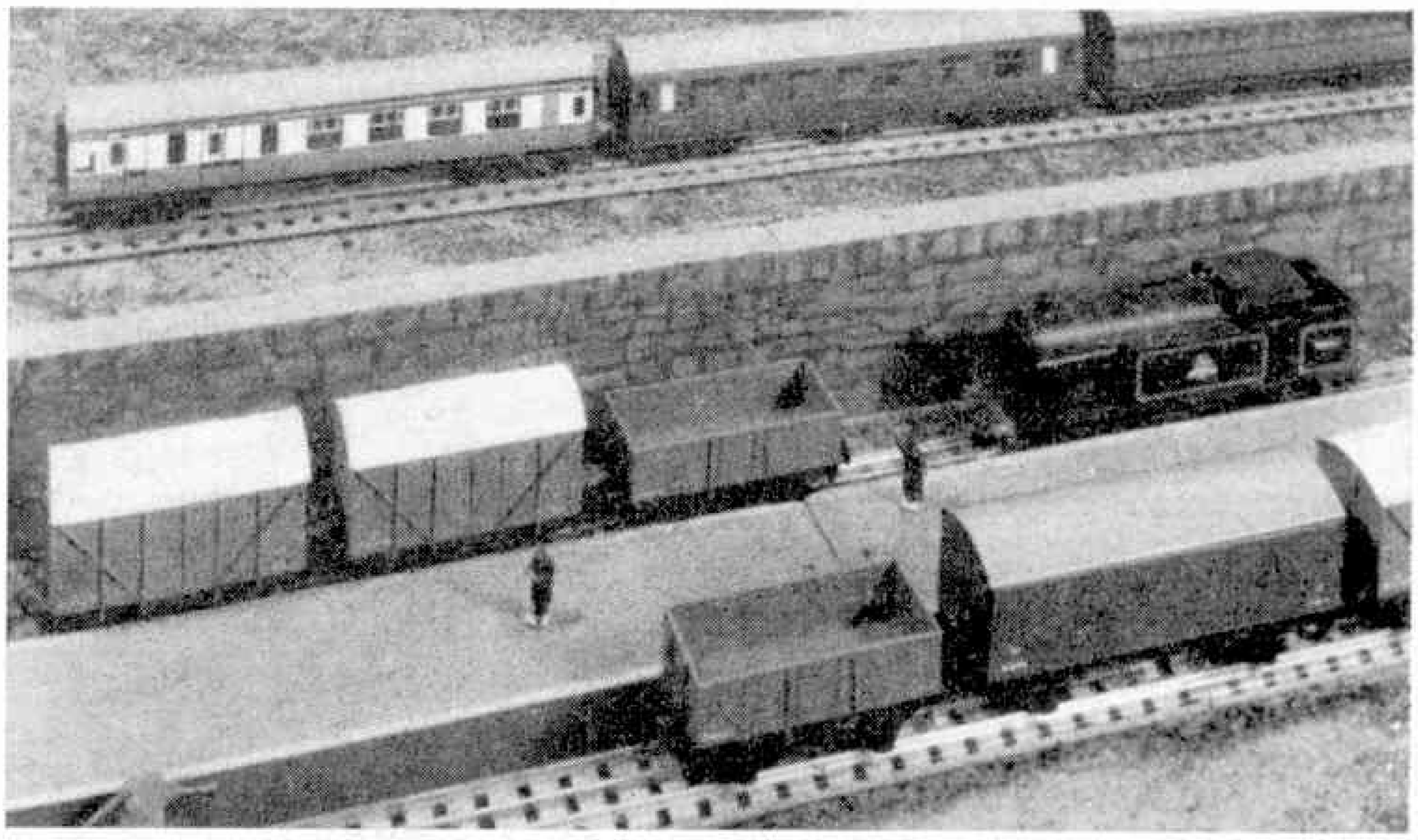
ALTHOUGH on most miniature railway layouts a considerable amount of attention is given to the working and accommodation of passenger trains, provision for goods traffic—apart from the installation of sidings for the storage of rolling stock—is liable to be somewhat neglected. Most miniature railway owners hasten to provide at least one passenger station for their trains, but are not concerned so much about the freight side of things. There really is no excuse for this now, since the introduction of the Hornby-Dublo Kit, No. 5020, which provides the means of assembling a really splendid Goods Depot. The picture above shows the finished item in use and I am sure you will all agree that the Goods Depot is an effective and attractive addition to the Hornby-Dublo System.

Road Access Important

Naturally, space is required for the effective development of a freight yard of the kind shown and this can prove a little difficult on layouts where space is restricted. It is important to have road access, for Dublo Dinky Toys or other suitable vehicles, and on several layouts I have come across considerable ingenuity has been exercised by the owners in fitting up overbridges crossing the main line so that the goods yard within the main oval can be reached from the "outside world".

In arrangements of this kind the activities of the engineer and of the layout expert are closely connected, and as in real life the engineer has to provide the track required by the traffic man I am sure you will not mind if I have a little to say about siding arrangements. If at all possible there should be a certain amount of space between the different tracks, otherwise the whole yard has a compressed and confusing aspect. Notice, therefore, that there is a respectable space between the tracks in the picture on this page. Obviously the staff must have room to move about while performing their different duties, in preparing trains or in disposing of them, or rather of the wagons of which they are composed.

Where a certain amount of yard space can be provided in addition to the goods depot itself there will usually be a track reserved for coal traffic, or for other loads that can be dealt with directly in the open by bringing the road vehicles alongside. This is the general situation in the sort of yard we have been considering, but matters



A simple type of platform that would be suitable for goods handling operations, as suggested in this article.

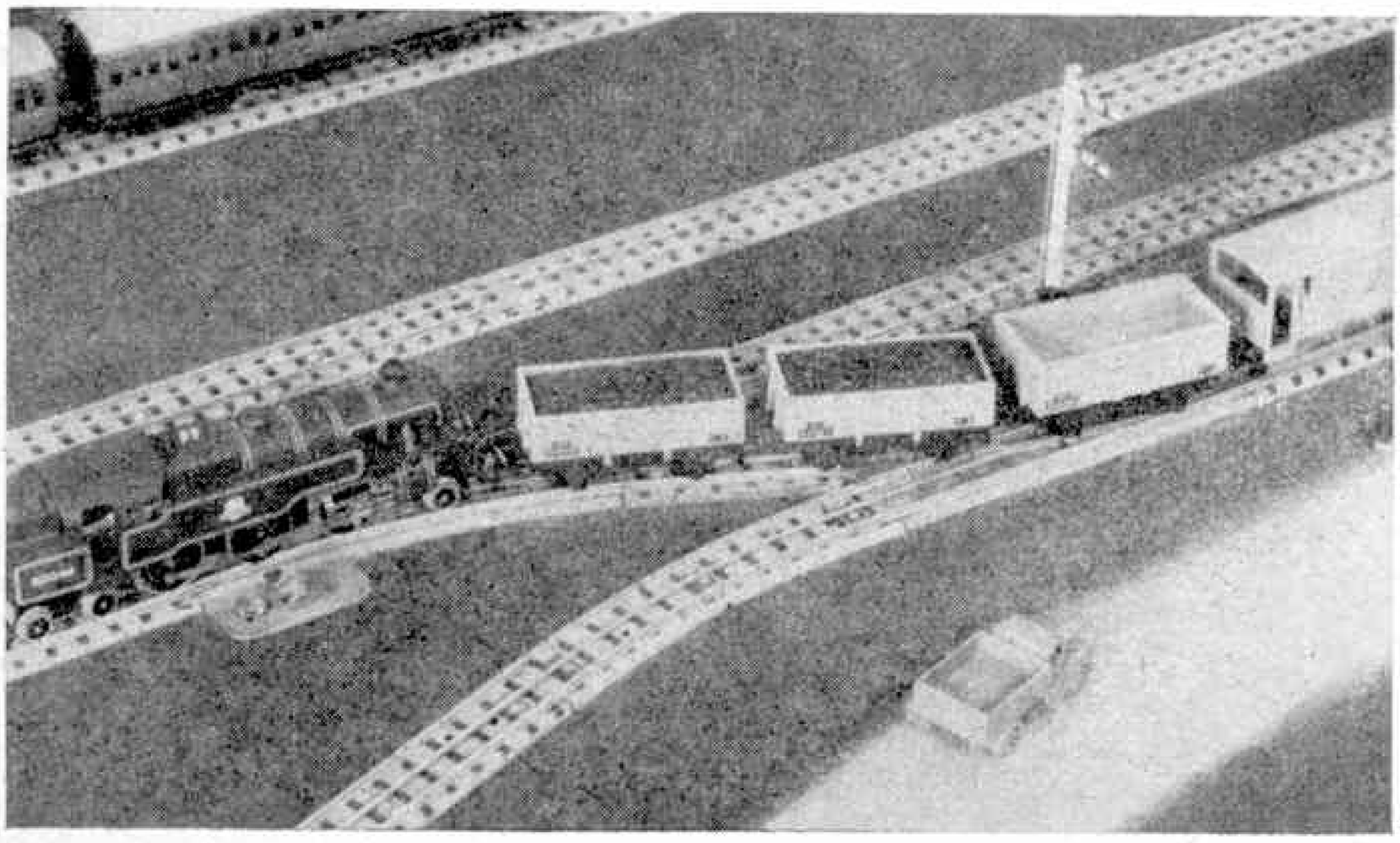
will be different at a depot — such as those frequently found in the larger traffic centres—that concentrates on general goods and parcel traffic. Here, the loading bank can be quite plain, the kind of thing that can be readily made up by the Hornby-Dublo owner at home. Possibly solid or built-up wooden structures may be preferred, although it is not difficult to rig up a suitable wood-and-card platform that will give quite good service.

The type of thing I have in mind appears in the upper picture on this page, where the actual platform sections are solid lengths of wood, as is the boundary wall. This kind of goods depot could, with advantage, be roofed over, but this has not been done in this particular instance as otherwise you might not be able to see down on to the platforms themselves. As you might expect, Vans for the most part are commonly dealt with at such depots and some of the familiar standard vehicles in the Hornby-Dublo System are included in the picture. There are also two Wagons of the open type, as these do find their way into depots of this kind from time to time.

Sometimes one stays there for a spell in order to receive the rubbish that accumulates in all such places. When full it is moved away and another one takes its place. This is a little touch for which you can possibly spare an open wagon.

Station Tractor

In either kind of depot very good use can be made of the Lansing-Bagnall Tractor and Trailer just introduced into the Dublo Dinky Toys range and described in detail elsewhere in this issue. The standard assembly consists of the motor tractor unit with a driver at the wheel, and a trailer, both items being finished in B.R. red. This is just the thing for buzzing about the platforms with suitable model loads. As the Trailer is available separately, a train of several of these can be made up, just like those long strings of trolleys one sees at many main line passenger stations. The unit can be used on the ground as well, if you are not able to find room for it on any of your platforms.



A Three-Rail 2-6-4 Tank draws out of the siding with a short train.

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For other Stamp Advertisements see also pages 314 and 316

Stamp Collectors' Corner

By F. E. Metcalfe

DO YOU COLLECT IRISH?

I was in Ireland last September for my usual jaunt. I think it is the world's best country for a holiday, and the year I want to miss my trip there will mean I am beyond enjoying life. Stamps, of course, were on everybody's mind, for the big case on stamp auctions was on. I also was thinking about stamps, Irish stamps in particular, and the news that the Eire Post Office had decided to change their methods regarding the commemorative stamps which they issue from time to time. Their decision made me feel that now was the time to really go in for Irish stamps, and I am passing the tip on.

I have previously touched on this change, but with so many collectors, at this time of the year, thinking of taking up a new country, I suggest Eire should be given consideration. It has everything a collector needs, and there is no need to spend the earth to put up a good show.

What was the change to which I have already referred? Well, it was the policy of the Eire Post Office not only to distribute, all over the country, any special stamps it issued, but to keep them on sale for an indefinite period at the Dublin Philatelic Bureau. The result was that such stamps remained year after year at current prices in the catalogues, and while the average collector does not just indulge in the hobby for the profit he can make out of it, he—or she, for there are a lot of women collectors nowadays—would not be human if he did not like to see his stamps rising a little in value.

Well, they will rise now; in fact, they have already risen, for October 1 last saw the withdrawal of all Eire special issues with one exception, to which I will refer later. In future, any new issues which may appear (this refers only to the commemoratives, of course, and not to the definitive stamps, or common-or-garden issue) will only be on sale up and down the country for three months and after that at the Dublin Bureau for another three months. Then off sale they will go. I think I may have played a small part in the change, but that's another matter.

Now, Irish stamps can be divided into two sections. There were the British stamps which were overprinted, in 1922, for use in Eire, when she set up house for herself, and those specially printed for Eire's own use, which appeared shortly afterwards. It is interesting to note that the designs selected for the first Eire issue are still in use. The only change there has been is in the watermark.

Now the British overprints have been made very complicated. The philatelists got their teeth into them, and while these issues are of great interest to the expert philatelist, not all of us are expert enough to tackle them. So I suggest that Ireland's own stamps be given consideration. I am leaving out the overprints, except for the pair which first appeared to commemorate the Easter Rising.

These are Irish stamps anyhow, for the overprints were not on British stamps at all. Of course, if you feel like tackling the lot you will find a very fine list of the British overprints in Gibbons Part I. It is a fine piece of listing, but I must warn you, it is a tough assignment.

No, we ordinary folk will be safer keeping to Irish only, (*Continued on page 317*)

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Stamp Gossip

SCOUTING

Many countries release more stamps than the U.S.A., but there is none which turns out more, or even as many, different issues. This year, for instance, nineteen objects will be philatelically commemorated. But, I must hasten to add, there is no question of the U.S.A. Post Office attempting to exploit collectors (as is the case with many other foreign postal administrations) for it is doubtful if one per cent of these special stamps are bought by philatelists, and, of course, the Post Office knows this. As a matter of fact, I rather imagine that if the Post Office were an entirely free agent in the matter there would be fewer new stamps, and considering some of the interests which have been favoured by a special stamp issue it would, perhaps, have been no loss to anyone if the stamps had not appeared.

One of America's stamps which may interest *M.M.* readers is one issued this year to commemorate the fiftieth anniversary of the founding of the Boy Scout Movement in the U.S.A. It is not by any means the first stamp issued in honour of the Boy Scout Movement in general; as a matter of fact you can form a small collection of such items. But this is the first stamp of its kind I can recall in which the real origin of the movement is not indicated in some way. The Boy Scout Badge, and Baden-Powell himself, figure on many stamps, and in this way the rest of the world has shown some appreciation of a great man and a great movement.

PEANUTS

I imagine there are not many who read these lines who have not, at one time or another, enjoyed a feed of succulent peanuts, which have such nice soft shells, making them so easy to get at (and I am not overlooking the mess we so often make on the floor when we do get at them). But I wonder how many of us know how they grow? Just before I wrote these lines I asked two people that question. One replied that he didn't know, nor did he care, but they were jolly nice to eat when stuck in toffee; the other thought for a minute then remarked that, as they were called monkey nuts, they must grow on trees, to get their name and that must be the answer.

Actually, they grow in the ground, and the plants themselves have a faint resemblance to clover, as can be seen from the illustration on the French African stamp. This was one of the crops they hoped would do well in British East Africa, when they tried that big land clearance scheme during the slump in the early 'thirties. Of course, these nuts are not grown so that we can eat them in toffee. It is the oil they contain we are mostly after, and the stamp illustrated tells the story very well.

HERM AND LUNDY

I have received more than one letter from *Meccano Magazine* readers regarding my recent notes on the stamps issued by these two islands. I think if anything they are actually more popular in the U.S.A. than in the United Kingdom. But while they fulfil a postal duty, it must be remembered that our own Post Office does not recognise their existence and insists that they be placed on the backs of envelopes. All this does not detract from their interest, for most people

(*Continued on page 317*)

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42 Spencer Road West, Beech Hill, Wigan, Lancs.

Road and Track—(*Continued from page 275*)

The Five Farinas

In recent months I have driven each of the five Farina saloons from the B.M.C. stable and undoubtedly these well-established British marques—Austin, Morris, M.G., Wolseley and Riley—have given their name to a series of sturdy, dependable and comfortable 1½-litre saloons with a fair turn of speed. The five cars differ in equipment, engine power output, gear ratios and other details but, apart from the front-end treatment, are almost identical in appearance. They vary in price as well, with the Austin A.55 the cheapest at £801 and the Riley 4 Sixty Eight the most expensive at £1,082.

I think the most handsome of the five is the Austin A.55 Cambridge, but that is a matter of opinion. So far as performance is concerned the Riley is undoubtedly the fastest of the five.

The power unit, which is the well-tried and proved 1489 cc. B.M.C. four-cylinder engine, is basically the same for all five cars and they all have that delightfully silky and fast four-speed B.M.C. gearbox with a floor-mounted gear lever.

In single carburetter form the engine powers the Austin, the Morris Oxford Series V and the Wolseley 15/60. However, both the M.G. Magnette (Mark III) and the Riley have twin carburetters, and of the two I consider the Riley to have a slight edge on the M.G. In mechanical details the two cars—on the surface—are identical, but there is something about the Riley engine that gives it just a little more "steam". Maybe it has a different shaped camshaft and a sturdier bottom end?

We had a lot of fun with this 90 m.p.h. luxury sports saloon with the sporting feel. On M1 we bettered the manufacturer's figures of 0–50 in 14 seconds and 0–60 in 17:7, and the speedometer needle was not far short of 100 m.p.h. when we really let the Riley have her head.

The Riley is docile in that she can potter at 20 m.p.h. in top gear without snatching and purposeful in that she can settle down to a happy cruising speed of 70–75 with power in reserve. Steering is light and precise and very much to my liking, for a fast car needs to be positioned accurately and easily when it is being hustled along. In the Riley 4 Sixty Eight, B.M.C. have combined comfort, performance and economy in a car that the sporting motorist can drive fast and hard.

Air Racing Can Be Fun—(*Continued from page 280*)

meet the standards demanded by the P.R.P.A. Intended to ensure that only safe, strong aircraft compete in the races, they include a take-off at full throttle without veering more than 30 feet to either side of a straight line on the ground; a pull-up to an acceleration of at least 6 G (six times the pull of gravity) at a height above 5,000 feet and speed of 175 m.p.h.; a dive at 1.3 times the aircraft's maximum speed in level flight; and three tight turns of at least 120 degrees at full speed without any appreciable loss of height. Needless to say, all pilots wear parachutes.

Having qualified, the aircraft then fly a one-lap trial to find out how fast they are, and a few aerobatic acts and other displays are usually thrown in for good measure. On the Sunday, come the actual races.

These consist of three elimination heats of 10–12 circuits of a 2–2½ mile course around six pylons, a consolation event of the same length and the finals around 12–15 laps, plus a full programme of stunt flying, demonstrations of new or unusual aircraft and some flying by military pilots.

Stamp Collector's Corner—(*Continued from page 313*)

and the first set will be the definitive issue which appeared on December 6, 1922.

As I have already mentioned, this issue is still current, although two values (8d. and 11d.) have been added and the watermark has been changed, from 1940 onwards, from "S in E" to "E". In the first set there are one or two stamps worth looking for. These are the ½d., 1d. and 2d. values, which were issued in stamp machines, and are imperf. either vertically or horizontally. All are scarce, but the king-pin is the 2d. which appeared around 1935. The stamps are perforated along the top and bottom, but the sides are imperf. Only an odd copy or so is known, and if you came across a genuine mint copy you would get upwards of £50 for it; for one used, about half as much. If you found one on an envelope, well, you could have a real fine holiday in Ireland on the proceeds of the sale.

As I have said, the only change in the definitives to date (some claim that the word "definites" and not "definitives" is correct. I am only following the crowd in using the word I do) has been the watermark. It is not always very easy to tell the one from the other, but in the case of the first the S is inside the Gaelic E. When you come to arrange your sets, I would suggest that you first mount the set to 1/–, with the "SE" watermark. Follow with the three high values from 2/6 to 10/– which appeared in 1937, then bring in the set to 10/– with the E watermark, which was issued between 1940 and '50, and leave space for the next definitive set which, I have a hunch, will not be long in appearing.

Next, start a new page altogether with the special issues. The first of these appeared in June 1929 and marked the centenary of Catholic emancipation. It is interesting to note that stamps belonging to this set of three were actually on sale at the Bureau as late as the autumn of last year. Now, of course, they have gone from the Bureau, along with the others.

But here is a point—the Bureau still has folders on sale, and these contain single copies of most of the stamps Eire has issued. I do not know exactly what the cost is, but you will only have to pay face value (somewhere around £2) and such a collection would give you a wonderful start. What about nudging uncle?

After the "Emancipation" issue, there have been a number of others, but none of more than two stamps, except the 1950 "Holy Year" set, which consisted of three. And, of course, there is the air mail issue (a real beauty) which has six values and, as one magazine puts it, to show how impartial Ireland is they not only issued a couple of stamps in honour of the great temperance reformer Father Mathew, but last year Arthur Guinness, the founder of the famous firm of brewers, was also allowed to make his bow on a stamp issue.

In view of the demand for a cheap catalogue of Irish stamps, a full listing has been given in the Commonwealth QEII Catalogue, and in a special section details of the various issues I have not room to give here will be found.

With so many Irish people, or their descendants, in the U.S.A., it is only natural that Irish stamps will be very popular over there. The change in plans for handling these stamps will, I feel sure, result in a similar popularity in Britain and the rest of the Commonwealth. So, if you are thinking of making an inexpensive change, what about ould Ireland?

Stamp Gossip—(*Continued from page 315*)

feel that the dog-in-a-manger attitude of the Post Office does it little credit.

There is one interesting point, however. It is understood that Devonshire County Council wishes to take over Herm, and if it does the Post Office will have to provide postal facilities, in which event Lundy would issue no more of its own stamps. In the meantime, Herm is going strong, and no doubt will continue to do so.

TIERRA DEL FUEGO

The Land of Fire. What a romantic name, and how unromantic the place really is. I know because I lived not very far away, and went down in that direction several times.

Actually, the town where I lived for a time, both before and after the first world war, was Puerto Madryn, at the head of the gulf where the Argentinos have been making such a fuss about submarines which were allegedly lurking in the waters of the bay.

I don't suppose that there was anything in the claim (although perhaps by the time these lines are in print something will have been proved to show that my guess is wrong), and the Russian claim that all the depth charges would kill would be fish was probably near the mark. But if there were no submarines, there are fish to be found in abundance. There is a long wooden pier from Puerto Madryn stretching out into the bay, and we used to fish from the end of it. We would throw out bits of bread and meat as bait, then drop our lines, and just pull 'em in. Another dodge was to go at night and lower lamps down to the water—and that also used to attract fish. But, while I could tell one or two really good fishing yarns about the Gulfo de Nuevo, this is supposed to be a stamp article, so I had better get back to my subject. I must just mention, however, that Madryn is the port where there is a railway line which goes up to the Welsh colony of Chubut. Some forty miles inland, you come to what they call the "valley" and there you find descendants of Welshmen who went out there, over 100 years ago, to found a colony. It's a rather strange story, and I wish I had room to tell you about it.

EGYPT

This country's stamps used to be much more popular with British collectors than they are today, but latterly I have noticed some return in that erstwhile popularity. As the Land of the Nile is issuing one stamp more artistic than another, and as many of these stamps are easily obtainable cheaply, used, Egypt might be a country worth considering. Take the little stamp illustrated. I picked it out of a dealer's stock book for a penny. Just examine the design. Isn't is a beauty?

TIP OF THE MONTH

Shortly, I hope to write an article on our own British stamps issued during the present reign, for, so full of interest are they (what with their three watermarks, the work of two printers, and the graphite and phosphor-lined stamps) that more and more collectors are concentrating on them. All this, of course, means that the scarce items—yes, some are already getting into that class, although they were only issued yesterday, as it were—are getting difficult to obtain, and costing more when you do come across them.

The first "QE" stamps had the Tudor Crown

(*Continued on next page*)

Recalling the Heyday of the Donegal Line

(*Continued from page 272*)

being replaced by a similar vehicle. No. 10 had been destroyed by fire in 1940, but in this case the blank was filled by the purchase of a diesel railcar from the Clogher Valley Railway, which closed in 1941.

It was also from the Clogher Valley that locomotive No. 11 originated. This interesting specimen was originally a steam tractor but the County Donegal rebuilt it with a 74-horsepower diesel engine. Appropriately named *Phœnix*, it could usually be found busily shunting at Strabane.

The seating capacity of the railcars was often insufficient to cope with the passenger traffic and numerous trailer vehicles were available. These included an interesting box-like vehicle, with a 2–2–2–2 wheel arrangement, that had once been a petrol-engined car of the 5 ft. 3 in. gauge Dublin and Blessington Steam Tramway.

All the passenger-carrying vehicles, and *Phœnix*, were painted geranium red with cream upper panels. The freight stock, which was plain grey, included some quite massive bogie vans.

During 1959 it became apparent that much of the permanent way of the County Donegal system was in urgent need of renewal if the railway was to carry on. The expense of this work could not be justified and on December 31 last year the line was closed, although the County Donegal Railways Joint Committee will continue to operate a fleet of buses and lorries.

In their heyday the narrow-gauge railways of Ireland totalled no fewer than 560 miles. With the disappearance of the County Donegal system only the remote West Clare Railway, comprising about 50 miles of line, remains at the moment of writing.

The Story of Britain's Piers—(*Continued from page 277*)

extra workers. These are deck-hands who keep the pier clean, chair attendants who set out between 2,000 and 5,000 deck-chairs a day and collect the money charged for them, and, less noticeable, the firemen who are ready to deal with an outbreak the moment it occurs.

Finally, there are divers who go underwater daily to make sure that the feet of the pier remain firmly planted.

Southend boasts the longest pier in the country; it is more than a mile and a quarter long and people crowd on to it at the average rate of 93,000 a day in the holiday season. To make the long journey effortless, a £99,000 electric railway with streamlined trains runs a fifteen minute service to the pierhead. The pier is lighted by 28,000 electric lamps.

Southport has a pier over three-quarters of a mile in length, and Skegness claims the largest glass-covered pier in Britain. The pier there is one-third of a mile long, and 1,856 panes of glass cover more than 650 feet of it.

The three famous Blackpool piers—the North, Central and South—make no great claims to length, although the North Pier is 750 yards long, but all are popular with the shoals of visitors who pour into Blackpool every year.

Piers are highly romantic places. A pier official told me that thousands of marriage proposals are made on piers every summer, and that most of them are accepted.

But people intent on gaining things other than partners in marriage haunt the crowded piers. They are ideal hunting grounds for pickpockets, who reap a rich summer harvest annually. Their skill was revealed when a plain-clothes detective on one of the piers in the North of England had his wallet stolen. It contained £20.

Unsolved Mysteries of the Sea—(*Cont. from page 286*)

two columns, steaming side by side.

Suddenly, and without explanation, Sir George signalled for both columns to turn inwards towards each other. Other senior officers, seeing clearly the danger involved, were astounded. Only at the last moment did Admiral Tryon seem to realise what he had done, for he signalled "Full speed astern" almost as *Camperdown*, leading the opposite column, collided with *Victoria* and cut her in two.

The water reached the flagship's boilers within seconds and she, with her complement of 358 men, Admiral Tryon among them, was blown sky-high.

Why a sailor of Admiral Tryon's experience should have given such a tragic order was never explained. To add to the puzzle it was later stated that, at the precise moment of the *Victoria's* destruction, the Admiral was distinctly seen by his wife, and several of her guests, at a reception she was holding at her London home. It was claimed that he was seen to enter the room and leave by another door, speaking to no one.

Lastly, let us consider the case of the *Baychimo*, a fine, solid, steel steamer of 1,300 tons owned by the Hudson's Bay Company and used by them to collect furs along the Victoria Land coast of the North-West Territory of Canada.

She left Vancouver on a normal trip in July, 1931, but by October was fast in the pack-ice. Her commander wisely decided to leave her, for the winter, for the greater safety of the company's permanent huts built ashore, half a mile away. At the end of November a terrific blizzard confined the crew to their huts for two days, and when they emerged the *Baychimo* had vanished.

They searched for their ship for miles around on the pack-ice, but, failing to find her, came to the conclusion that she had broken up in the gale and sunk.

When they were rescued by Eskimos and reached Vancouver once again they were welcomed with amazement, for the company was in possession of reports that their ship had been sighted several hundred miles away to the East.

Eventually, in April 1938, a young explorer named Melvin found and boarded her, confirming that her vast cargo of furs was still in the hold.

Unfortunately, as he was now more than 3,000 miles from his base in Alaska he had insufficient equipment for salvage. As the months went on, other explorers, traders, Eskimos and a small schooner all sighted the *Baychimo* and endeavoured to capture her or her precious furs. All failed, and finally she disappeared into the limbo of lost ships, inaccessible to either the greed or the curiosity of man.

Evening Star—(*Continued from page 289*)

Stephenson and others. It is surely fitting that *Evening Star* should have been drafted to a South Wales motive power depot as it was in South Wales, at Penydarran, that Trevithick ran the first steam locomotive successfully to haul a load on rails as long ago as February 21, 1804.

The steam locomotive has passed through various stages of development and there can be few machines that have created such interest and attention, or have inspired such fierce loyalties.

How long No. 92220 will remain in service it is difficult to foretell, but a steam locomotive has an estimated life of 30 years or so. When *Evening Star* has made its last journey let us hope it will be preserved in company with the number of already withdrawn engines that rank as museum pieces.

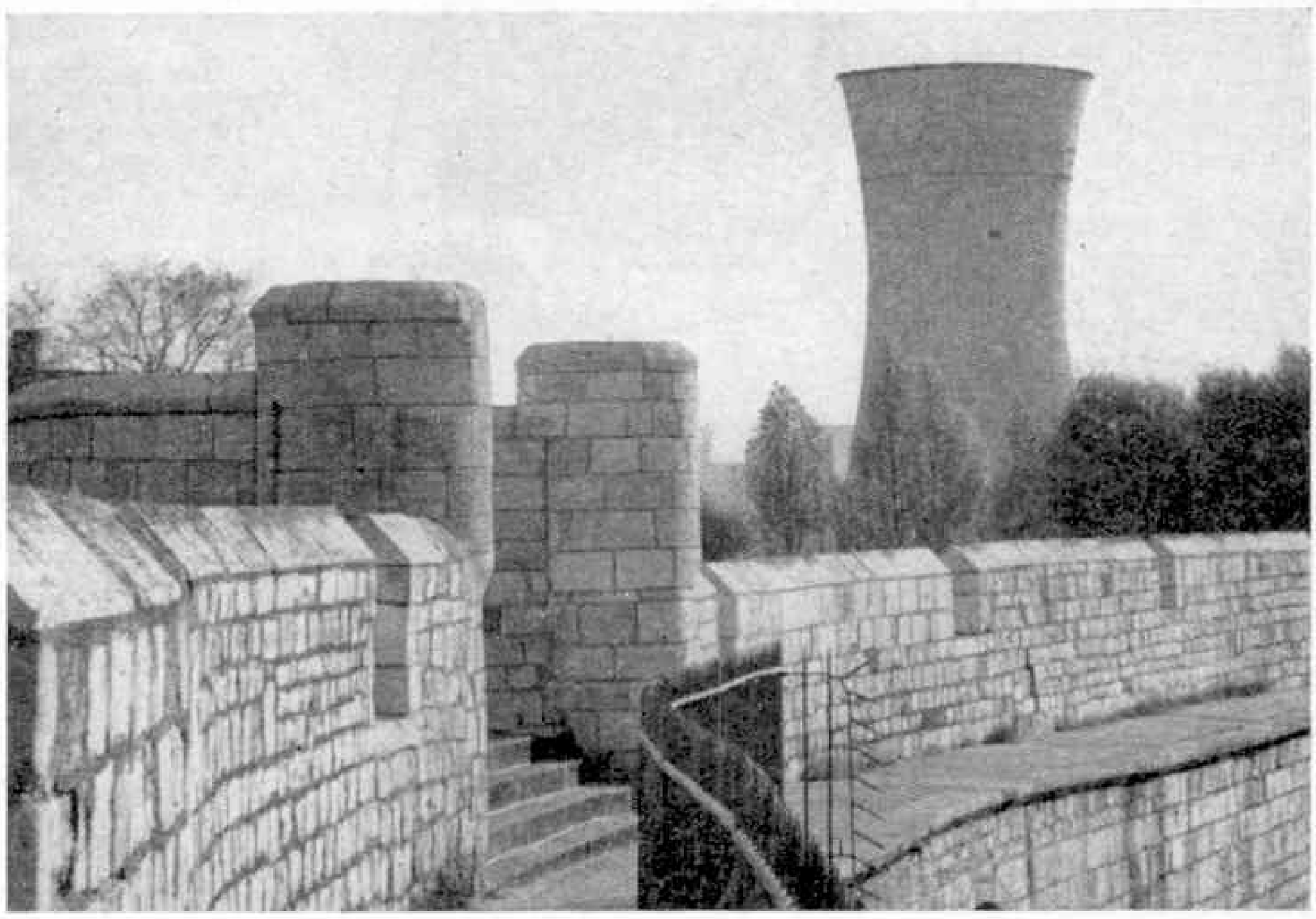
Recent figures show that there are more than 14,000 steam locomotives still in service, but this number is expected to be halved by 1963. On the other hand, the present 480 or so main line diesel locomotives will by then have been increased to about 2,300. The number of electric locomotives in service, at present 90, is expected to be more than doubled by that time.

Stamp Gossip—(*Continued from previous page*)

watermark, and for some reason or other the 10d. mint, which went off quickly, was missed by many. Next, when the St. Edward's Crown watermark, which followed the Tudor, was changed for the "Crown" only, the 1/- stamp was the one which was missed (mint, of course). So there we have two mint stamps to look for—the 10d. "First wmk" (CW 50) and the 1/- "second wmk" (CW 73). Get them now, and you will be glad later.

From Our Readers

This page is reserved for articles from our readers. Contributions not exceeding 500 words in length are invited on any subject of which the writer has special knowledge or experience. These should be written neatly on one side of the paper only, and should be accompanied if possible by original photographs for use as illustrations. Articles published will be paid for. Statements in articles submitted are accepted as being sent in good faith, but the Editor takes no responsibility for their accuracy.



Old and new pictured here in sharp contrast — the city walls of York, which form a a pleasant walk away from the traffic's din, and the new cooling tower.

A Contrast in Style

Today, we live in a period of rapid change, and daily, especially in our big cities, the old is being swept away to make room for the new. Sometimes, however, an old building, because of its beauty or architectural or historical significance, is retained and a new one appears beside it, forming a complete contrast in style and appearance. There is such a case in York where the old city walls, their days of practical usefulness long past, are jealously looked after as part of York's proud history. Towering above them stands the ultra-modern, severely practical cooling tower which is an essential part of life in modern York.

COLIN DENWOOD (Penrith).

River Craft from U.S.A.

For the first time in 20 years, American boats are arriving in Britain. Probably one of the first consignments was one from Owens Corporation Inc., the world-famous manufacturers of smallcraft who turn out a tremendous number of boats on car-style assembly lines. This consignment recently reached the Stourport boatyard of Midland Marine, Ltd., and the boats' trials produced much interest. In this photograph, Leslie Dunn, well-known Midlands T.V. personality, is seen enjoying a run at speed in one of the new craft.

J. B. SHILVOCK (Stourport-on-Severn).

Fireside Fun

"How much will you charge to take out my front tooth?"

"Five shillings."

"Oh, well, it doesn't matter, I'll pick a quarrel on the way home."

* * * *

Amateur Gardener: Ethel, about this acorn.

His wife: Yes dear?

Amateur Gardener: Where do you think it will give most shade?

* * * *

"I can't get my report card back," said the boy to his teacher. "You gave me a 'First' in something and my parents are still showing it to relatives."

* * * *

Teacher: You've had a whacking every day of the week. What have you to say for yourself?

Pupil: I'm glad it's Friday.

* * * *

The court jester was in disgrace. "Thou shalt die," thundered his master, "and thou shalt choose the manner of thy death."

"Then, your Majesty," replied the fool, "I choose to die of old age."

* * * *

Two young boys were arguing with each other. Finally, the younger one said, "I don't like what you've just said and I give you five minutes to take it back."

"Five minutes?" snarled the elder. "And what if I don't agree?"

The little one edged away a trifle. "How much longer would you want?" he enquired.

* * * *

A father saw his son sitting on top of another boy in the garden. "Why are you pinning George down like that?" he asked.

"Because he hit me in the eye," replied his son.

"How many times have I told you to count to 100 before losing your temper?"

"That's just what I'm doing now," replied the offspring, "but I'm sitting on him so that he'll be here when I get to 100".

* * * *

First Boy: When I grow up I want to be a bus conductor.

Second Boy: Why not the driver?

First Boy: I want to be the conductor 'cause he gets all the comics kids leave on the bus.

An enthusiastic gardener was proud of his monster red currants. Several of his friends advised him to send an exhibit to the local horticultural show. He sent a fine basket of the currants, but was disappointed when his entry secured only third prize. He found out afterwards that a mistake had been made. They had been placed in the tomato class.

* * * *

Two old caterpillars were crawling slowly along the ground when a butterfly fluttered gaily past them.

The first one nudged his friend and said, "You'll never get me up in one of those new-fangled things."

* * * *

THIS MONTH'S BRAIN TEASER

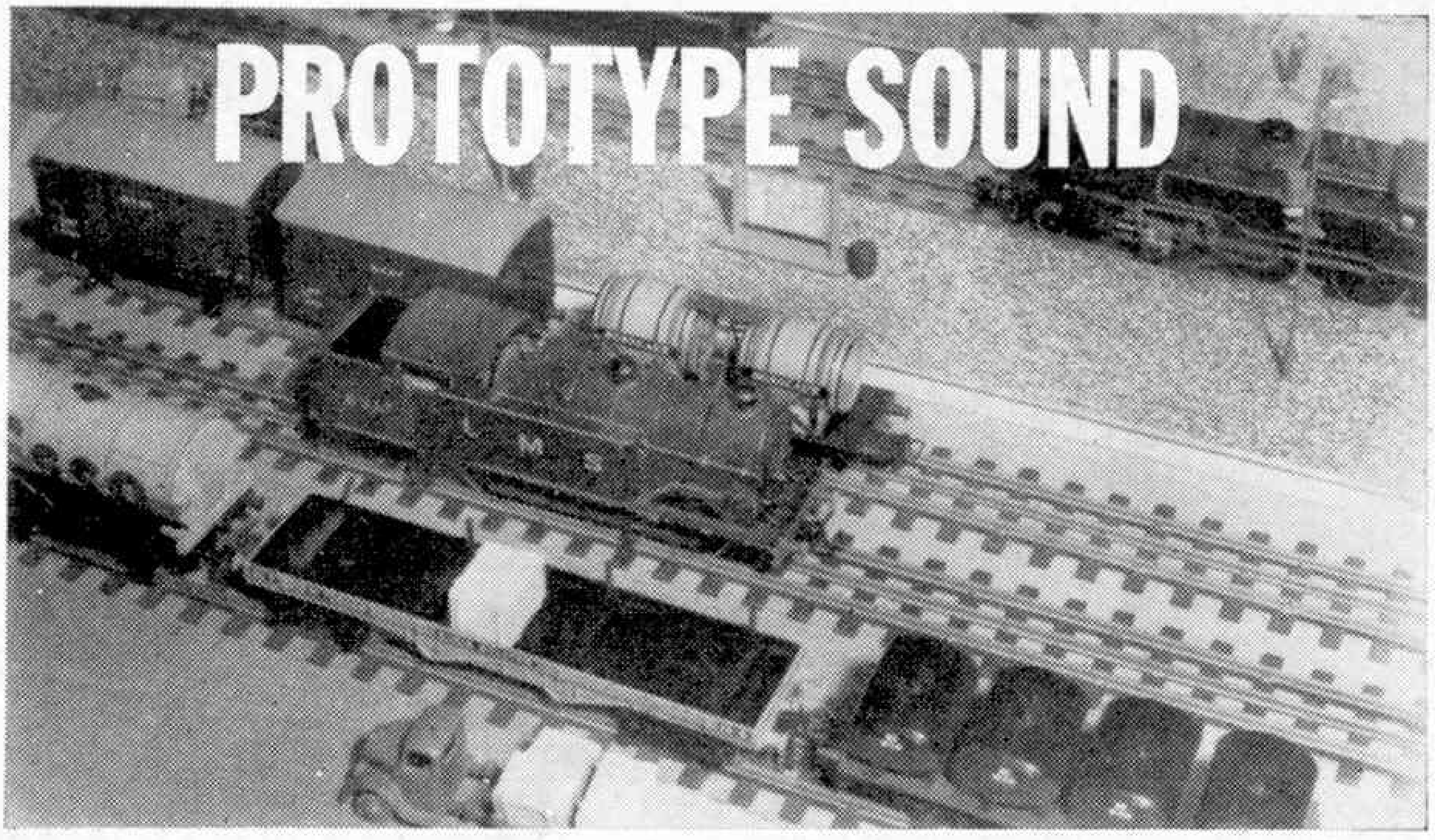
As I am, I'm an animal, feared by mankind,
Change but my head and a fruit you will find.
Now change it again, and ask the reason why,
If you don't find a fissure bye and bye.

SOLUTION TO LAST MONTH'S PUZZLE

A Number Problem

The solution to the interesting problem that appeared in the Fireside Fun page last month is given in this sketch and it will be seen that the numbers are arranged in an orderly manner, the smallest falling in the same column as the largest and so on.

10	11	14	15
9	12	13	16
8	5	4	1
7	6	3	2



ADDS REALITY

Ever thought how much added realism sound could give to your layout? Supposing your Pacific locomotive could pull out to a guard's whistle against a background of doors slamming and a flurry of steam! Supposing your model terminus could announce arrivals and departure and recreate the bustle, the real living sound of prototype operation!

In fact such things are easily arranged once you own a Grundig 'Cub'.

The 'Cub' is a miniature battery-operated portable tape recorder that records any sound anywhere. It can give you a complete sound snapshot.

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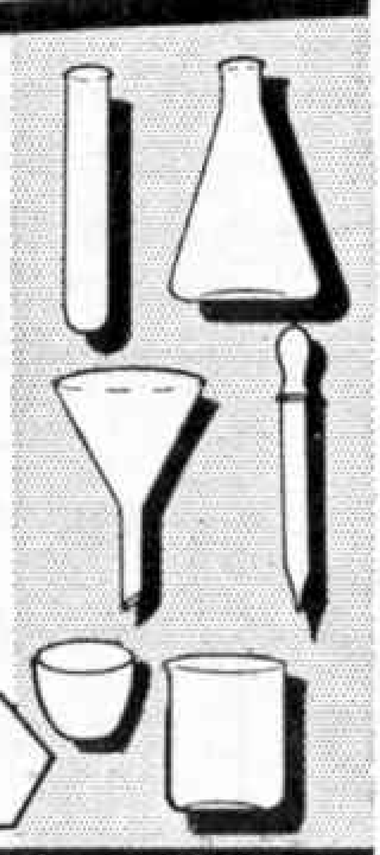

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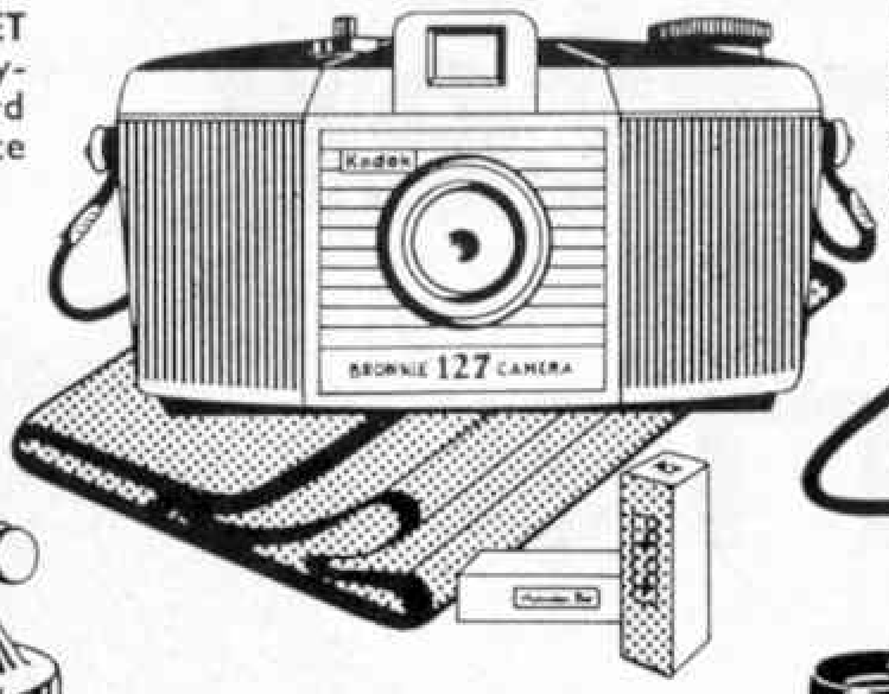

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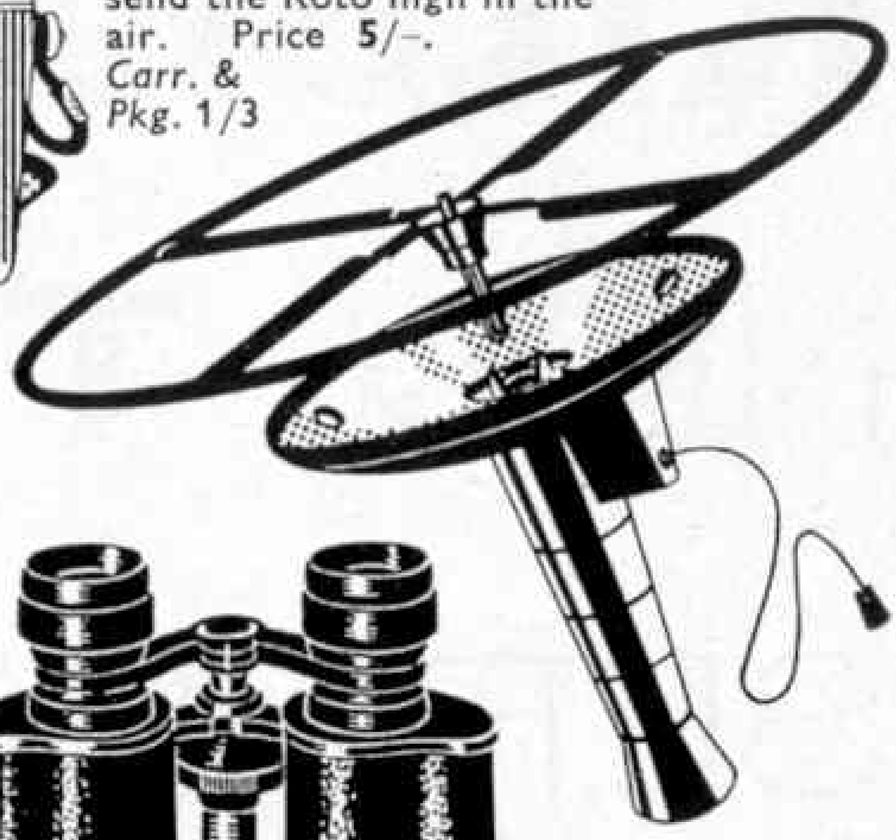

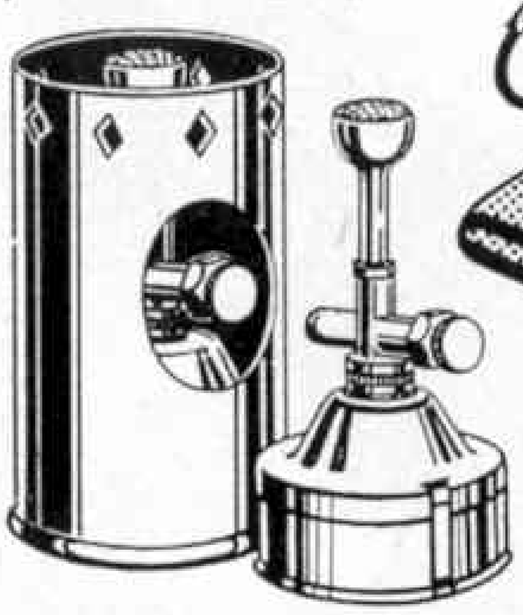

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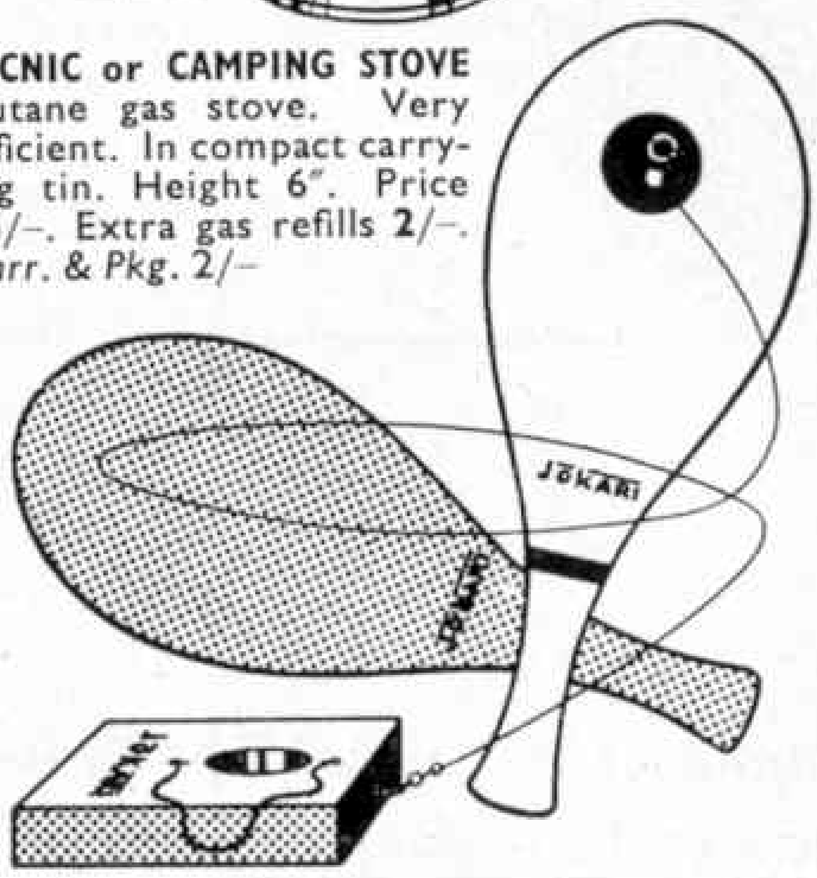

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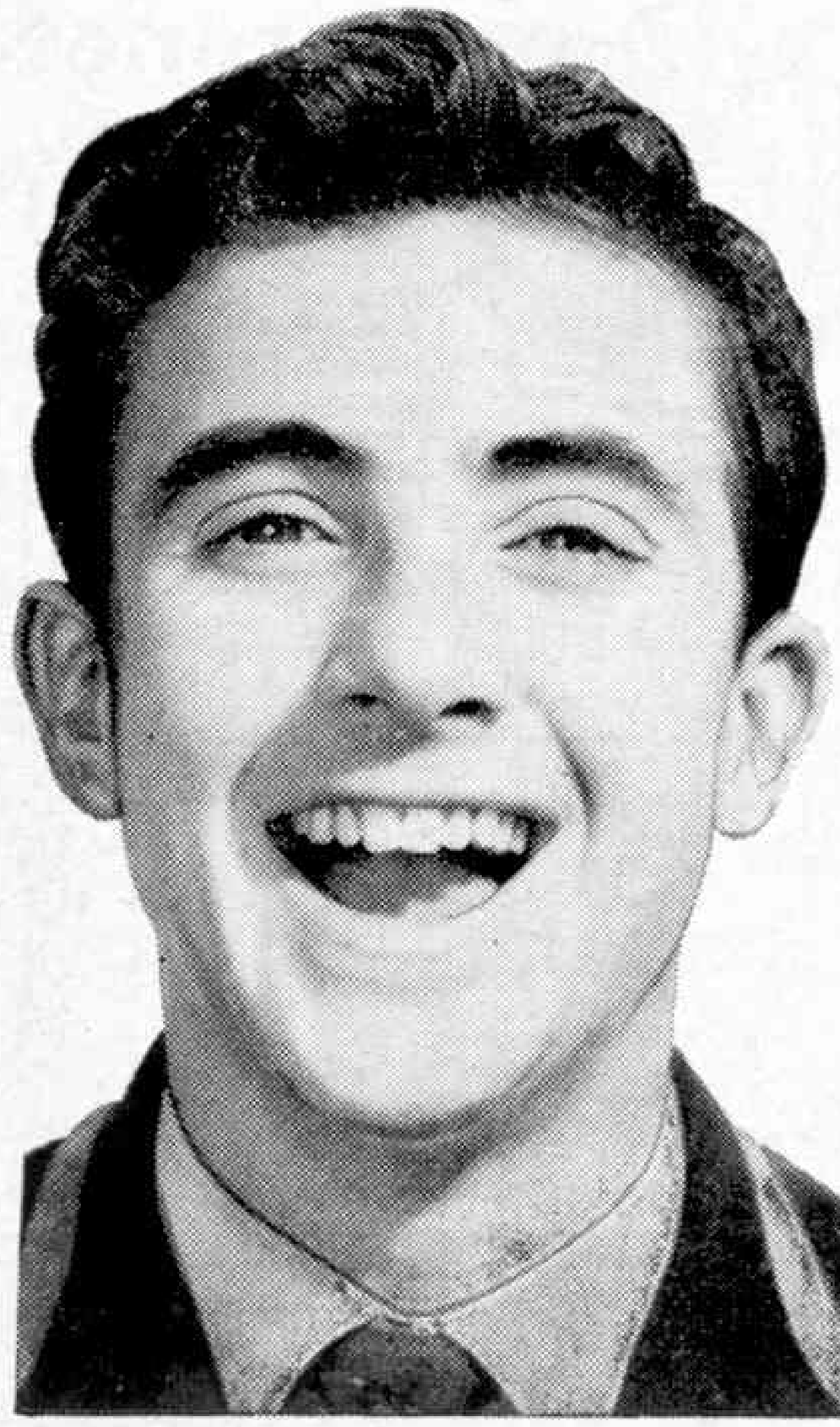

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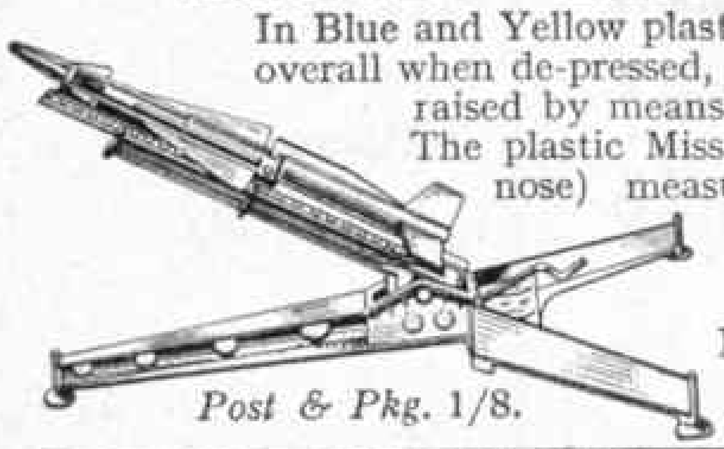

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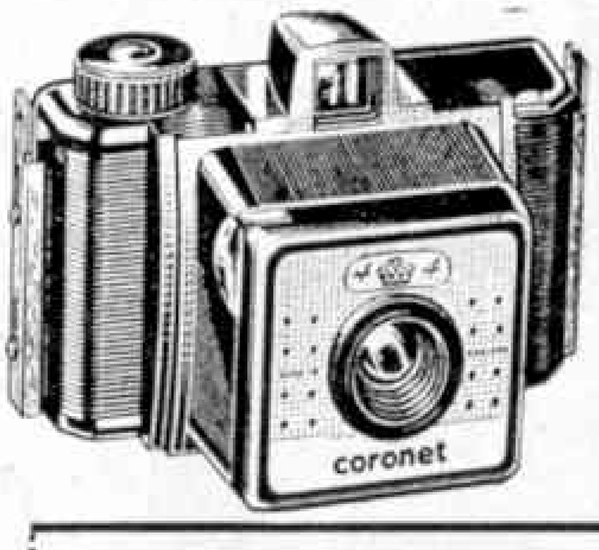

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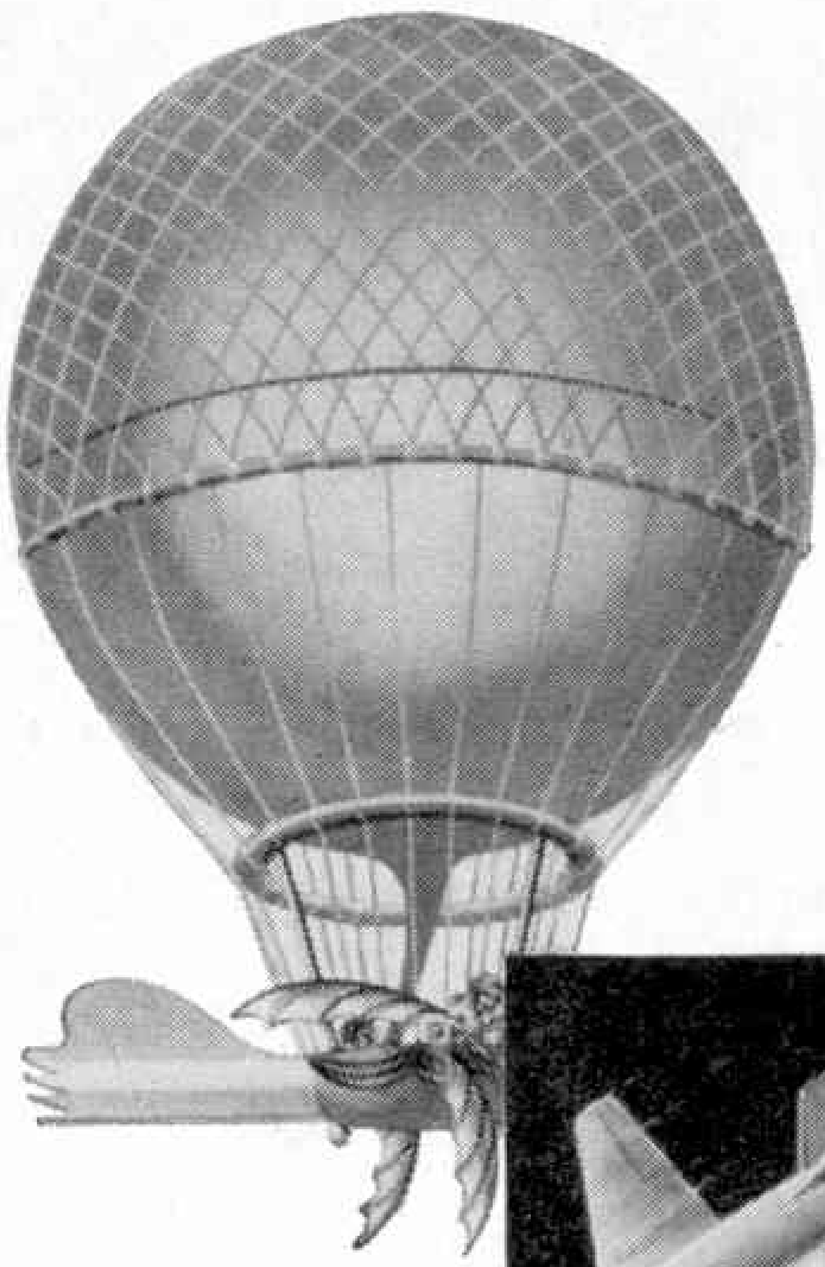

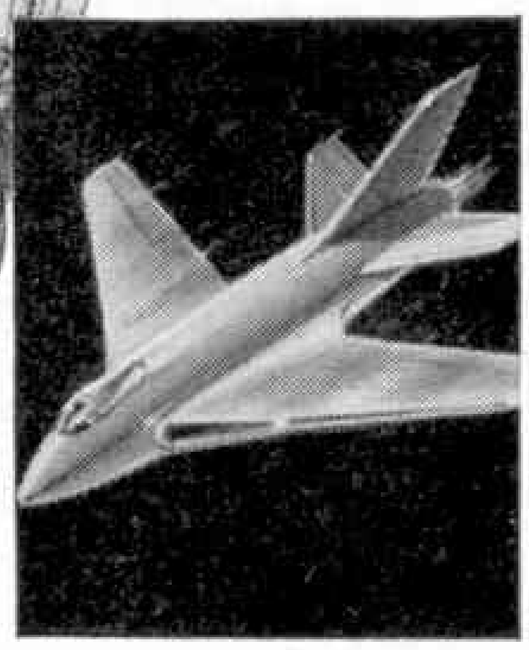

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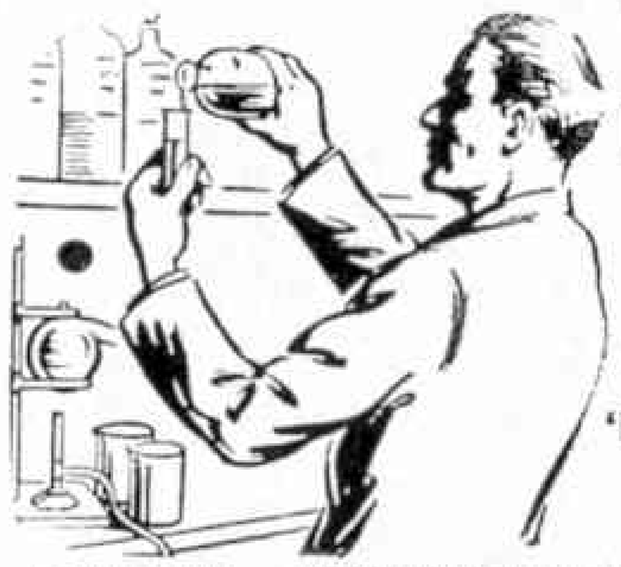

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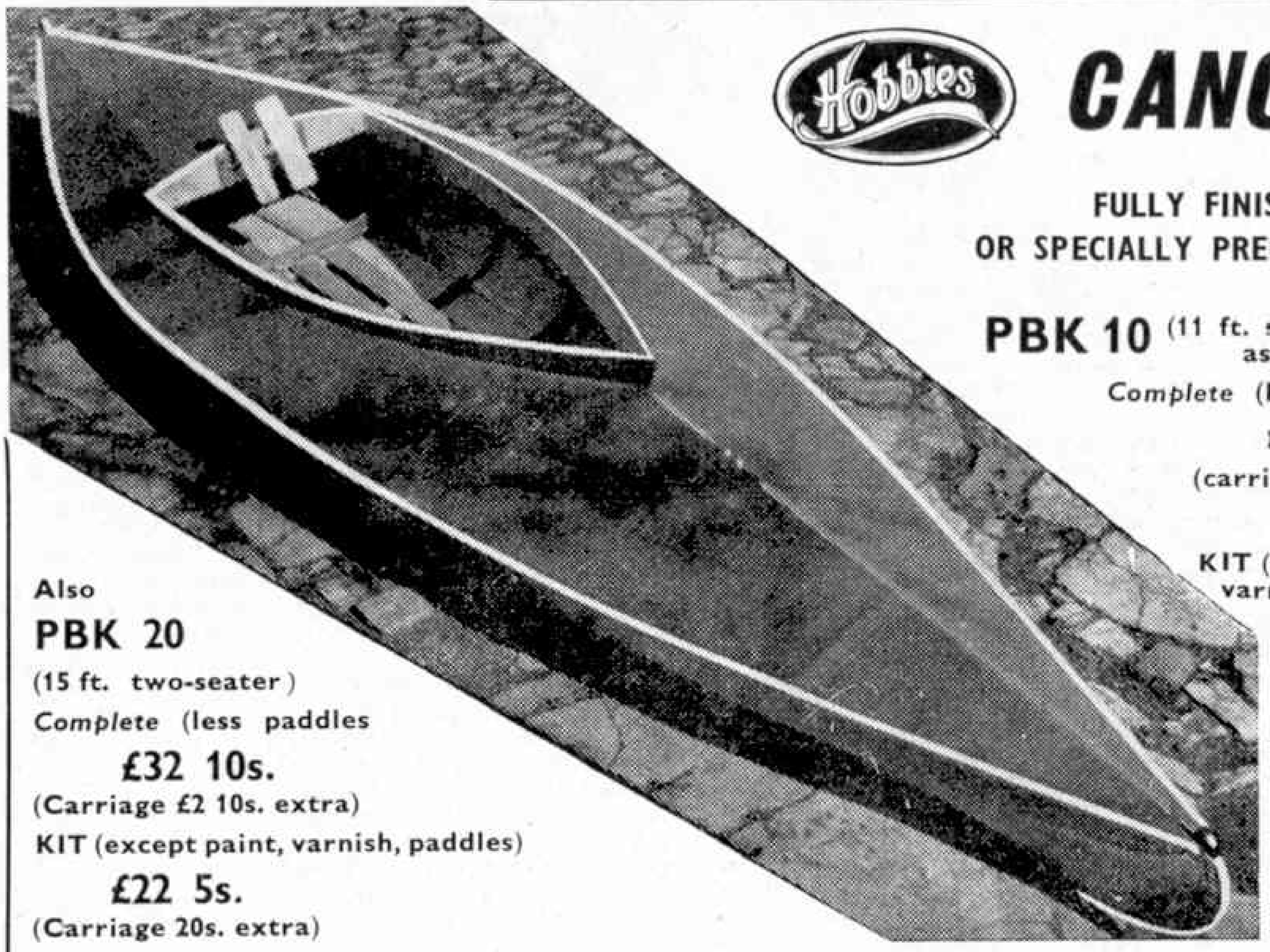

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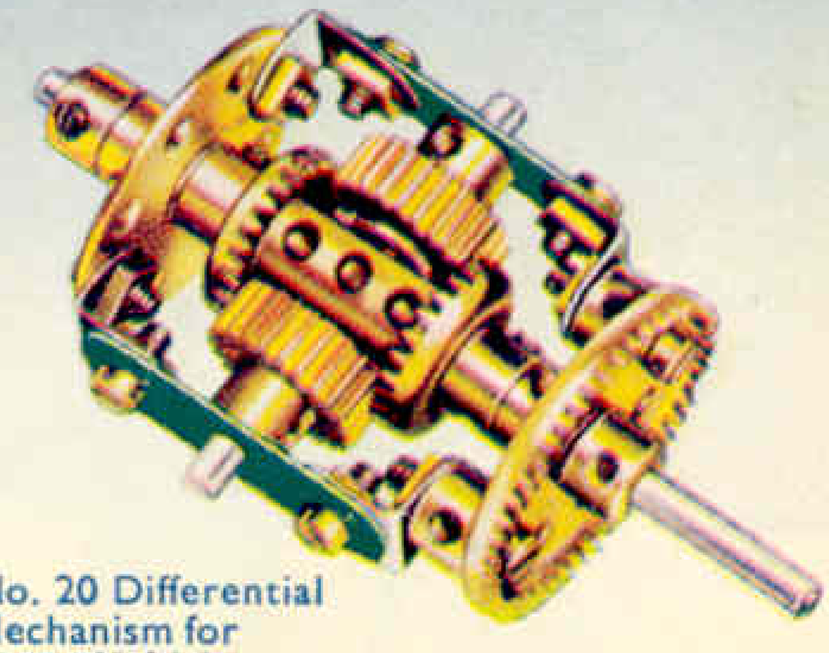

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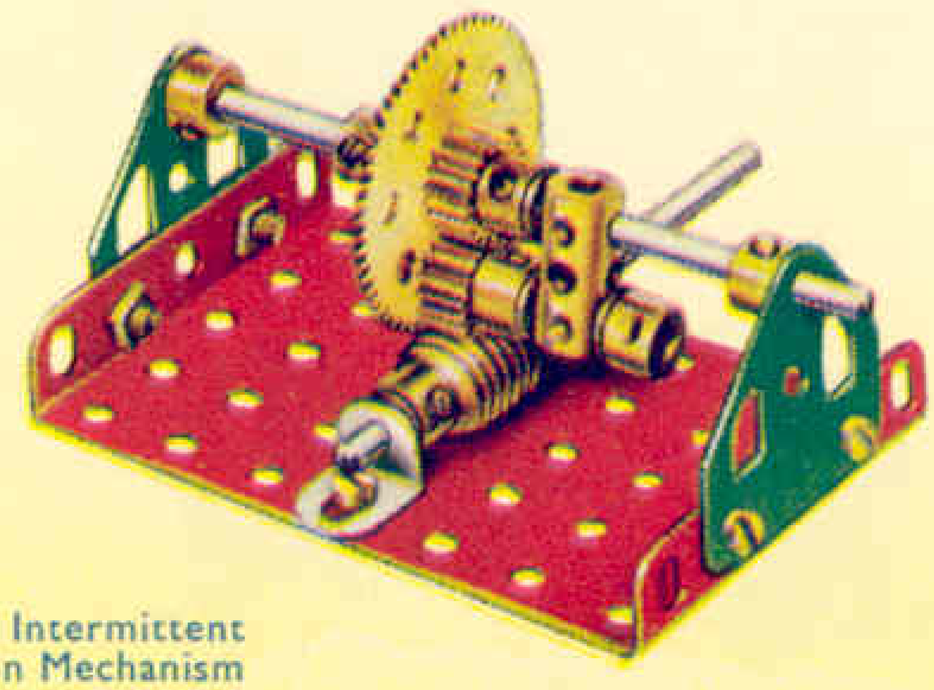

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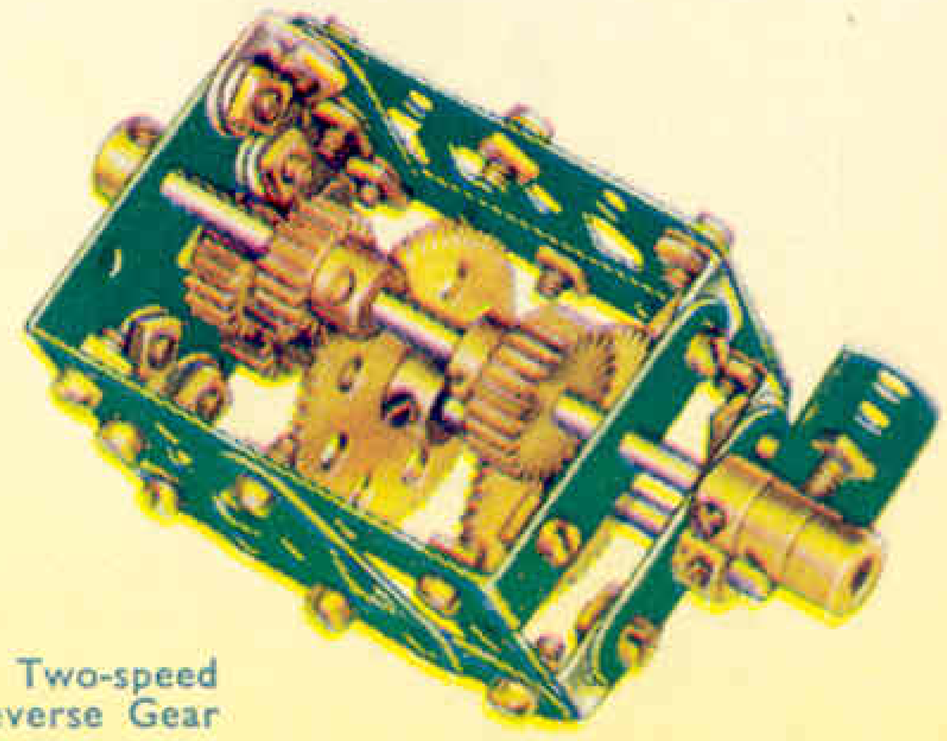

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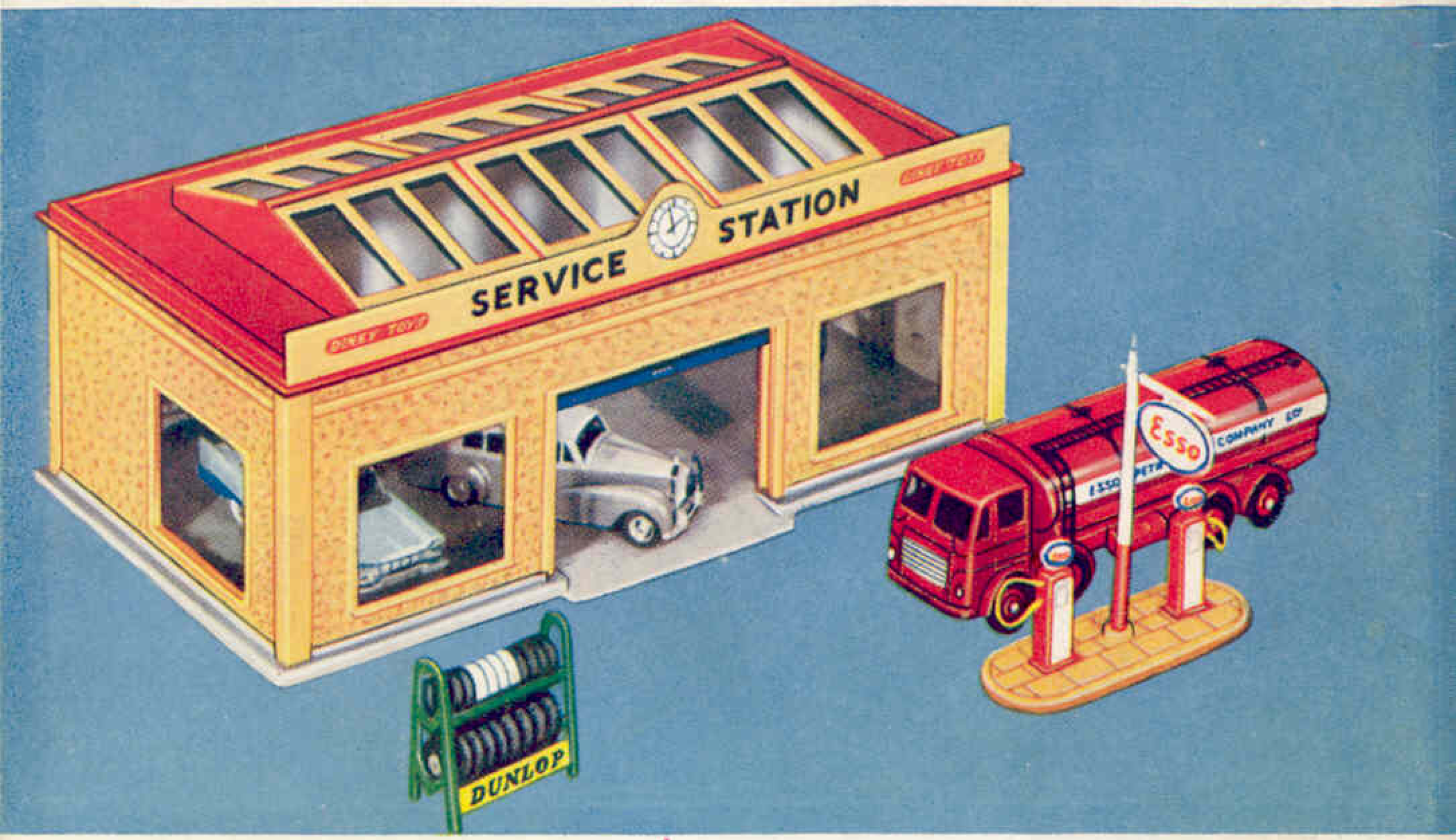

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MODEL OF THE MONTH.

Transporter Bridge.

Illustrated in the June, 1960, issue of the Meccano Magazine.

Construction of the Towers and Bases.

The towers and bases at the ends of the bridge are similar in general design. The top of each base is a 5½" x 2½" Flanged Plate 1 and the front is formed by two 5½" x 1½" Flexible Plates bolted together lengthways. Each end is a 5½" x 2½" Flexible Plate curved as shown and connected at its lower corners by a 2½" x ½" Double Angle Strip. A 2½" x 1½" Flexible Plate 2 is placed at each side of the back of the base.

One end of the top of each base is completed by a Semi-Circular Plate 3, and the other end of one base is filled in by a straightened 1.11/16" radius Curved Plate 4. A 2½" x 1½" Flanged Plate 5 is attached to the second base as shown. The Plate 4 is edged by a 2½" x 1" Double Angle Strip, which is connected to the base by a Fishplate.

The sides of each approach roadway are 2½" x 2½" Flexible Plates, attached to the Plates 2 by Angle Brackets and strengthened by 2½" Strips and 2½" x ½" Double Angle Strips 6. The sides are connected by a further 2½" x ½" Double Angle Strip 7. The top of each approach is formed by a 4½" x 2½" Flexible Plate and two 2½" x 2½" Flexible Plates 8, and is bolted to the Flanged Plate 1 and to the lugs of the Double Angle Strips 6. The handrails are 2½" Stepped Curved Strips attached to Angle Brackets.

Each tower of each base consists of two 12½" Strips connected at their upper ends by a Double Bracket, which supports a 1" x 1" Angle Bracket 9. The towers are connected by two 5½" Strips 10. Two Formed Slotted Strips are bolted to one of the towers to edge the Semi-Circular Plate 3.

The liftable barrier is made by fixing a 3½" Rod in a Crank 11 bolted to the Flanged Plate 1. A Right-Angle Rod and Strip Connector is fitted to the top end of the Rod, and a Rod and Strip Connector 12 is pivoted on a lock-nutted bolt as shown. The Rod and Strip Connector supports a 3½" Rod that forms the barrier.

When the barrier is lowered the end of the 3½" Rod catches behind a Fishplate, which is spaced from one of the towers by a Spring Clip on a ¾" Bolt.

Transporter Gantry.

The main girder 13 of the gantry consists of four 12½" Angle Girders arranged in pairs to form two U-section girders. The U-section girders are connected at the centre by a Fishplate and a 3" Strip, and are extended at their outer ends by 5½" Strips 14 that overlap the girder 13 by two holes each. Two 12½" Strips 15 are connected to each of the girders 13 by 5½" Strips, 2½" Strips and 1½" Strips. The girders 1 are joined by 3½" x ½" Double Angle Strips 16, and 3½" Strips 17 attached to the Strips 14 by Angle Brackets. The gantry is bolted to the lugs of the 1" x 1" Angle Brackets 9.

Trolley and the Travelling Carriage.

The trolley consists of two 3½" Strips joined at each end by a 1½" x ½" Double Angle Strip. The wheels are ¾" Flanged Wheels, and they are fixed on built-up rods, each made from two 1½" Rods joined by a Rod Connector. The wheels travel on the inner edges of the U-section girders 13.

The base of the travelling carriage consists of two 3½" x 2½" Flanged Plates and two 2½" x 1½" Flexible Plates, and the sides are 5½" x 1½" Flexible Plates. A 2½" Curved Strip and two 2½" Strips are bolted to each side as shown. The upper ends of the 2½" Strips support 5½" Strips 18 and ½" Reversed Angle Brackets. The carriage is suspended from the trolley by Cords as shown.

The Operating Mechanism.

Two Flat Trunnions 19 are bolted to Trunnions fixed to the Flanged Plate 5, and they support a 4" Rod 20 that carries a ½" Pinion and a Bush Wheel. A Threaded Pin in the Bush Wheel forms a winding handle. The ½" Pinion drives a 57-tooth Gear on a built-up rod 21, which is made from a 2" and a 1" Rod joined by a Coupling. A 1" Pulley on rod 21 is connected by a Cord belt to a 1" Pulley on a Rod 22, which is held by Collars in two of the Angle Brackets 9.

A length of Cord is tied at one end to a Driving Band fastened to the trolley. The Cord is taken round a 1" Pulley 23 on Rod 22, under the trolley and round

a 1" Pulley 24. It is then tied to the other end of the trolley. The Pulley 24 is fixed on a 4" Rod held by Collars in two of the Angle Brackets 9.

Parts Required to build the Transporter Bridge:- 12 of No. 1; 18 of No. 2; 6 of No. 3; 2 of No. 4; 12 of No. 5; 4 of No. 6a; 8 of No. 8; 5 of No. 10; 4 of No. 11; 16 of No. 12; 4 of No. 12a; 1 of No. 15; 2 of No. 15b; 4 of No. 16; 1 of No. 17; 4 of No. 18a; 1 of No. 18b; 4 of No. 20b; 4 of No. 22; 1 of No. 24; 1 of No. 26; 1 of No. 27a; 2 of No. 35; 173 of No. 37a; 162 of No. 37b; 26 of No. 38; 1 of No. 40; 1 of No. 46; 2 of No. 48; 10 of No. 48a; 2 of No. 48b; 1 of No. 51; 2 of No. 52; 2 of No. 53; 6 of No. 59; 2 of No. 62; 1 of No. 63; 2 of No. 90; 4 of No. 90a; 2 of No. 111a; 4 of 111c; 1 of No. 115; 4 of No. 125; 2 of No. 126; 2 of No. 126a; 6 of No. 188; 6 of No. 189; 5 of No. 190; 2 of No. 191; 4 of No. 192; 2 of No. 212; 2 of No. 212a; 2 of No. 213; 2 of No. 214; 4 of No. 215.